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East Europe Report

ECONOMIC AND INDUSTRIAL AFFAIRS

No. 1947

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This serial report contains information on economic theory, organization, planning and management; major agreements on and development of trade within CEMA and outside the Bloc; articles on all aspects of the materials, services, machine, electronics, and precision equipment industries; and concepts and attainments in agriculture, forestry, and the food industry.

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EAST EUROPE REPORT

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CONSUMER GOODS IMPROVEMENT SEEN THROUGH CEMA COOPERATION

East Berlin DER HANDEL in German Vol 29 No 4, Aug 79 signed to press 26 Jun 79 pp 9-11

[Interview with Gerhard Briksa, GDR minister for trade and supply: "Cooperation Within CEMA Benefits Everyone"]

[Text] [Question] Esteemed Comrade Minister, this year the Council for Economic Mutual Aid can look back on 30 years of successful activity. In this connection, how would you evaluate cooperation in the area of internal trade within the framework of CEMA?

[Answer] Economic and scientific-technical cooperation between the ministries of internal trade, research facilities, and trade enterprises of the CEMA countries has been continuously developed and strengthened during this time, particularly in the last decade. It has become an important factor in socialist economic integration with the USSR and the other socialist countries.

The development of consumer goods exchange, scientific and technical cooperation to perfect the material and technical base of internal trade, as well as the methods and forms of demand research and the forecasting of basic developmental tendencies in popular demand up to the year 1990 and beyond, have been increased from year to year. In addition, the direct sharing of experience in matters of management, planning and trade organization, as well as in the use of electronic data processing, has contributed to the development of internal trade in all CEMA countries.

[Question] Could you name a few examples of this?

[Answer] Yes, gladly! In the year 1978 the market research institutes for internal trade among the CEMA member countries worked out a "Forecast of the Development of Demand by the Population for Durable Consumer Goods." It contains a quantitative and qualitative evaluation of the development of such appliances as refrigerators and washing machines. The results of these elaborations have been turned over by the ministers' conference to the CEMA

Committee for Planning and Cooperation as well as to the CEMA Standing Committee on Machine Construction. They will be used by these authoritative bodies for the elaboration of long-range target programs in the areas of technical consumer goods and machine construction.

In the GDR the joint work results already attained represent an important foundation for the long-term goals concerning consumer goods development which have been agreed upon by industry and commerce.

A further example. Starting from the principle that sharing experience is the cheapest investment, consultations will be held yearly, in accordance with the ministers' work plan, with management cadre and specialists in order to perfect the management and planning of internal trade.

Utilized in the conceptual plan for intensifying commercial activity was the experience and knowledge of our associated countries in the following areas:

Effective forms of working with inventories in internal trade;
New Methods of management and planning as well as economic stimulation of trade enterprises;
Application of scientific work organization in the trade enterprises.

Every year, moreover, the ministers' conference on internal trade analyzes the course and development of consumer goods exchange and establishes measures for solving problems as they occur.

The population in our countries responded well to the sales weeks called "Goods from Allied Countries" held by the department stores. These sale weeks help consolidate amicable relations between our fraternal populations and enhance the supply of consumer goods.

[Question] Comrade Minister, a focal point of cooperation concerns the questions of commercial organization and technology. What results have been attained recently in this area by the member countries of the CEMA?

[Answer] In order to successfully solve the problems facing internal trade in all member countries of CEMA, problems having to do with continually improving supply to the population while simultaneously raising the quality and efficiency of commercial activity, it is necessary in the first instance to intensify commercial activity as the main avenue of increasing productivity. The central objective here is to speed up the turnover of goods. The research capacities of internal trade in the CEMA countries have therefore been concentrating on the development of such important solutions as the rationalization of inventory management in wholesale trade in industrial goods as well as in fruit, vegetables and potatoes. Also being developed are uniform commercial-technological methods for market halls as well as the rationalization and reconstruction of the retail trade network to provide commodities for everyday use.

[Question] Would you be a little more specific?

[Answer] In past years, for example, the research facilities for internal trade of the GDR, the USSR, the People's Republic of Bulgaria, the People's Republic of Hungary and the People's Republic of Poland, in close coordination with the CEMA Standing Committee on Construction, completed a uniform plan for a market hall project. It contains the commercial-technological and technical requirements for building market halls using lightweight metal construction. As regards economizing on materials, investment in construction and actual construction schedules, very favorable parameters were obtained. The economic effectiveness of this type of construction may be clearly seen in the following figures:

Reduction of steel input by 34 percent;
Reduction of manufacturing expenditures in mass production by 10 percent;
Decrease in investment expenditures of around 20 percent.

New functional solutions for deposit bottles, refrigeration as well as the organization of assortments can be traced back to use of the experiences of our fraternal socialist countries. Based on this common CEMA project, which corresponds to the newest requirements, a market hall of this type will already be completed and opened in our capital, Berlin, on the eve of the 30th anniversary of our republic. The short time-span of 2-1/2 years between the start of the project and initial construction, as well as the opening of mass production is, therefore, exemplary for the transfer of scientific-technical solutions into practice.

[Question] In September of this year, the 11th Conference of Ministers for Internal Trade of the CEMA Member Countries will take place in Berlin. As acting chairman of the conference, would you tell us something about the problems to be debated here?

[Answer] In accordance with the procedural rules of CEMA, the 11th Conference of Ministers for Internal Trade of the CEMA Member Countries will take place in the GDR in 1979. This conference, which is being held in the 30th year since the founding of CEMA and the 30th anniversary year of our republic, will certainly engender further efforts to increase cooperation in the area of internal trade. Of first-rank importance at this conference is elaboration of the plan for multilateral scientific-technological cooperation for the years 1981-1985.

On the basis of the resolutions of the 10th ministerial conference, which took place in Budapest, the specific themes of cooperation for the time-span of the next 5 years will be confirmed. This involves in the first instance working out rational forms of product turnover in the wholesale industrial goods trade and the development of facilities for specialized trade, as well as proposals to introduce industrially produced foods, efficiency testing and distribution facilities.

Once the specific themes are established, it will already be decided how, within the span of the next five-year plan, scientific-technical cooperation by the CEMA member countries will be concentrated on the increased intensification of supply and trade activity, and how efficiency reserves can be tapped through the increasing integration of the socialist countries. Furthermore, the 11th Conference will take up those measures which emerge from the XXXIII CEMA Council Conference for the ministers' advisory council for internal trade.

Besides the consultation on questions of the further development of product exchange in internal trade, it is also expected that there will be confirmation of proposals on the commercial-technological requirements for the chief parameters of commercial equipment. These constitute the basis for continued long-term specialization and cooperation in machine construction for various kinds of commercial equipment. Beyond this, it is expected that in a few commercial installations in Berlin and several bezirks, an international exchange of experience will be carried out with the participating delegations regarding the problems of intensification in the internal trade of the GDR. It is evident from what has been said that the 11th Conference is charged with handling an extensive work program.

I am convinced that the 11th Conference taking place in Berlin will also contribute to the further strengthening of friendship and the deepening of cooperation among the fraternal socialist countries in the area of internal trade.

9413
CSO: 2300

CONTINUING VHJ ENTERPRISE INTEGRATION DISCUSSED

Prague HOSPODARSKE NOVINY in Czech 14 Sep 79 p 5

[Article by Eng Jan Vacek, ScC, Federal Ministry of Metallurgy and Heavy Engineering: "From the Enterprise to the Entire Sector--Development of Internal Control in Metallurgy and Engineering"]

[Text] With the formation of the VHJ [economic production units] as the basic factors of control reaching its final stage, control in relations of general directorates and enterprises will also partly assume an internal character; this concerns particularly the process of transition to the concern organization. As for the principles thus far elaborated and tested in practice within national enterprises, their applicability has been expanded to a whole new basic control unit, the VHJ. It is therefore necessary to pay attention to a uniform development of internal control, especially from the viewpoint of its integration in the control system of the sector as an entity. That is the way we see it in our ministry.

It appears that in themselves the more exacting requirements and increasing demands for economic achievements of the enterprises have not exerted enough pressure for improvement of quality of their control. We encounter rather exceptionally more comprehensive and systematic processes leading to any improvement in the applied methods of control. Therefore, many enterprises are still facing a specific problem, namely, that the enterprise directorates, serving at the same time in their location in the capacity of the administration of the basic plant, are controlling plants in distant locations, that are often comprehensively equipped with only general indicators of the economic plan. Then it is control structure the enterprise resembles a small sectoral enterprise with associated organizations. This is also linked with considerable reserves remaining in the organization of executive processes, particularly in production, for example, in the distribution of basic processes of production in individual units of production, in the determination of suitable partial specialization, cooperation and processes of reproduction, the course of the material flow (if operating with materials), in the general schedule of the process of production (the problem of a continuous rate of products and of shift turnover), in maintaining and developing proportionality and regularity in the process of production, etc.

Internal planning has thus far neither coordinated individual parts of the plan nor included all tasks of the enterprise plan in the plans for internal units of the enterprise. It has not related value indicators precisely to the planned line of products. It lacks comprehensive criteria for subsequent operative controls, etc. This situation has been further aggravated by an insufficiently developed category of standards. An efficient mechanism for uniform control of the development of external restraints, for example, in deliveries of raw materials, materials, energy, mobility of the labor force, etc., has not been incorporated in the internal planning process.

We are not taking full advantage of the role of internal khozrashchot which has not been developed for every unit. Frequently the reason is in excessive demands on processing of information or in general, on the ability to formulate khozrashchot indicators, as for instance, in units for technological planning and operation of production, commercial technical services, etc. The extent of activity and competence of internal units of an enterprise is at the same time usually much broader (or narrower) than the corresponding system of khozrashchot indicators of the plan. Thus, a leading worker may be objectively responsible for a certain area but refuse any responsibility for the economy in that department, because the responsibility for material and value factors of the same activity has not been adequately defined.

We have ascertained furthermore that some very vital areas of internal control, particularly control of the technical development of products and technologies, and introduction of suitable innovations in production, control of the social development in a working collective, control of the workers' material and moral incentives (including socialist competition), and control of the development in the system of internal control as prerequisites for the automatic control system, have not been properly (not even schematically) developed. And precisely here, in the automatic control system, we have ascertained that a uniform system of methods for internal control must be developed expeditiously in correlation with the VHJ management and its supply of information. That is the fundamental prerequisite for subsequent efficient automation of control.

With the exception of certain enterprises, however, uniform regulations have not been introduced in practice as the basic integrating document explicitly stipulating the criteria and parameters for the procedure in individual control and executive processes. The haphazard character and incomprehensive approaches have been confirmed also by spot-checks which show that organizational standards of enterprises are not regulating to an adequate degree precisely the vital areas of control, important for practical control of the enterprise in the direction toward an efficient technical-economic and sociopolitical development and quality of labor. Instead, they tend to solve partial problems which, however, are observed state-wide and regularly controlled (as an example let us mention control of designated funds). As an external expression of the system of internal control, organizational standards, as a rule, do not constitute a uniform system.

Warning for the Seventh Five-Year Plan

It was our achievement in the current five-year plan that programs for the development of internal control were prepared in most enterprises, although they varied in detail and quality. It is gratifying that comprehensive programs for the development of internal control for the entire VHJ have been processed at the level of most general directorates. Nevertheless, the approaches and the level of those programs still vary. In some instances they refer to already elaborated documents, for example, for the construction of the enterprise automated control system, but merely presume improvement in the quality of control operations in units using automatic control systems. Specific tasks have not been stipulated; the programs are frequently formulated in the most general terms without any specification of the deadlines and of the workers in charge. Objective technical economic problems often are confused with the tasks in the development of internal control methods. In certain instances, however, these programs have already resulted in the elaboration of departmental regulations for internal control (in the VHJ Hutni Druhovyroba [Secondary Metallurgical Production] and Kovohute [Metallurgical Works]).

Every level of management must initiate a systematic process to upgrade internal control before the end of this five-year plan and simultaneously in preparation for the next five-year plan; it must proceed from a specific division of labor between the ministry, the general directorate of the VHJ, and the enterprises. Although the enterprises retain main responsibility in this respect, the involvement of general directorates of the VHJ is gaining importance. This will be reflected particularly in the following: the general directorates will

-stipulate a program to develop internal control for the five-year plan,
--administer methodically internal control in the VHJ. Its primary aim is to strive there for the enforcement of progressive methods and rational unification of the organization of enterprises, internal planning, tools of material and moral incentives, and information systems;
--submit to the ministry proposals for the solution of those methodological problems whose solution is outside their competence;
--organize exchanges of experience within the VHJ;
--coordinate utilization of external places of work by enterprises when implementing their programs for the development of internal control.

The conditions of the Seventh Five-Year Plan and intensified systematization in the development of control systems on all levels will demand that the entire process be more consistently regulated and initiated directly at the level of the ministry. Its tasks consist primarily of outlining the main targets for the development of internal control, furthermore, of enforcing rational unification of selected areas in conjunction with the building of enterprise automated control systems, and savings of problem-solving capacities. Moreover, development of those areas in the ministry which, in general, have not been adequately developed, will be more intensively enforced. Here we expect much from organized exchange and general adoption of progessive experience stemming from efficient solutions and areas of internal control of advanced enterprises and VHJ.

This year we are commemorating the thirtieth anniversary of CEMA's successful activity and therefore, we cannot disregard the need to apply systematically the abundant information concerning the progressive tendencies and experience gained in the control process above all in the socialist part of the world.

Once Again, Responsibilities of the VHJ

In conjunction with the transfer of numerous control operations to general directorates, the area of internal control in enterprises will be narrowed down, but at the same time, its factors will be extended up to the VHJ level. This requires observance of the unity with the development of the control system in the entire VHJ. The following requirements must be especially respected in the next period:

- General directorates of the VHJ (sectoral enterprises, concerns) must assume responsibility for the condition of internal control and for the solution of its basic problems; there the so called sectoral regulations (or rather, regulations or methodological principles in the VHJ) may be regarded as an important tool.

- They must stipulate the directions and specific tasks for the further development of the internal control system in the VHJ. In this context, they must deal with the following specific problems: delegation of authority and responsibility among the plants and enterprises; the level of comprehensive internal planning; reserves in the organization of executive processes; and processing and maintenance of technically and economically justified standards of all principal and developmental items in the program of production. Solutions of these and other problems must be approached from the standpoint of control by the VHJ as the basic unit.

- They must gradually elaborate sectoral regulations for internal control in the VHJ as a part of control regulations stemming from the status of the VHJ. They must elaborate these sectoral regulations in detail up to the degree of specificity required and made possible by practical control of the VHJ, and at the same time, they must proceed according to the following criteria:

- methodical solution of urgent problems related to internal control;
- enforcement of progressive factors in individual subsystems;
- linkage with the control of the VHJ;
- gaining advance in the development of methodical control prior to the introduction of automatic control systems, and
- rational unification of the internal control system in the VHJ.

Sectoral regulations thus conceived must serve as guidelines for enterprises and other organizations of the VHJ when formulating their own enterprise regulations. Control regulations of enterprises follow organizational rules of the enterprises; enterprise control processes represent the integrating and activating force. Next to the relatively stable organizational rules,

they serve as the basic, synthesizing standard whose individual parts, particularly as concerns their economic contents, will be flexibly adapted to the needs of control and economy of the enterprises. After all, as it appears from our experience, all enterprises should clearly formulate those regulations.

At any rate, any paralysis of the above-mentioned documents, or solution according to textbook propositions, must be completely avoided. We have adequate forces, many mature workers and collectives; we can, and must, rely on the support of the party and social organizations. All we need is that in the course of searching a solution particularly to chronic objective problems, each leading worker regularly consider what regulations must be adopted in the methodology of control processes and style of work, so as to deal with such problems in the most efficient way, or as the case may be, so as to prevent their recurrence.

9004
CSO: 2400

AGRONOMICAL DEADLINES MUST BE MET

Prague RUDE PRAVO in Czech 1 Oct 79 p 2

[Editorial by Jaroslav Michalek: "Agronomical Deadlines"]

[Text] Several agronomists working for agricultural enterprises individually complained in conversations that one of the biggest problems they have to deal with in the fall is meeting of the agronomical deadlines. "It's a problem," said one of them. However, he added that he often does not know how to arrange for really good and timely planting of everything, especially whenever it depends on clearing the area from which it is necessary to harvest beets or another preceding crop.

What should we say to it? Let us quote a few sentences by one of our leading grain experts, associate professor Engr Jiri Petr, CSc., stated in answering the following question: Why has this year's overwintering of winter crops been generally worse than in other years, despite the fact that there has been neither flooding nor uprooting of plants as a result of alternating severe frosts and thawing? "One of important reasons for the thin stands in the spring was their condition in the fall. Let us remember the inventory of the stands in the fall and the condition in which the winter crops went into the winter..." And the reasons? They could be summarized as follows: late soil preparation and sowing after expiration of agronomical deadlines. Thus, for instance, less than one-half of the planting area for winter grains was plowed by the beginning of October. An entire one-third of the planned planting area was planted after expiration of the agronomical deadline (15 October).

Research carried out by workers of the Research and Grain Breeding Institute in Kromeriz has demonstrated that the majority of stands which had to be improved by underplanting of spring grains or which had even to be plowed under in the spring, originated with these late plantings. Stands which survived gave, with some exceptions, considerably lesser yields--up to 20 percent--in spite of the fact that they were given thorough care, and generally they received better mineral nourishment in the form of nitrogen.

Agronomical deadlines are to be kept in mind, despite the fact that they are despised by some functionaries of agricultural enterprises who may show allergic reaction whenever the deadlines are merely mentioned as the above-mentioned agronomist did.

"It is especially necessary to realize that the majority of contemporary varieties of winter wheat grown in the CSSR require considerable demands on timely quality plowing and soil preparation, the correct nourishment system and early planting carried out within the agronomical deadlines," says another of our leading experts, Engr Lekes, DrSc. As demonstrated by experience, the yield of winter wheat is decided by 60 to 80 percent already in the fall. Deficiencies in soil preparation as well as in timing and quality of planting influence the yields most conspicuously in climatically unfavorable years and regions. This is true mainly of intensive short-stemmed varieties, but it applies to a large extent to all other varieties as well.

Most demanding in this respect primarily are the varieties Slavia, Sava, and Hela, which also require earliest planting. Other varieties--Yubileynaya, Ilyichovka, Juna, Mironovskaya Improved--do not require agronomists to hurry so much, however, that does not mean that they would be satisfied (and as a consequence that they would fully satisfy demands made on them) with too much delay in planting. They also demand attention and whenever they do not get it, one should not be too surprised that their yields reflect decline which, however, might be comparatively less conspicuous.

As a consequence, what should the cooperatives and farms do which are--as far as planting is concerned--more or less dependent on clearing the areas on which, for instance, sugar beets were grown? It is often really hard to find a reply, in spite of the fact that many agricultural enterprises are able to solve this problem with increasingly better results year by year. The secret is usually hidden in the quality of their preparations for fall field work and their ability organizationally to ensure a fast harvest, primarily in those fields on which seed drills are waiting.

However, it still is a great dilemma in many localities to harvest sugar beets without being out of breath and simultaneously to meet agronomical deadline of the subsequent planting. Thus, for instance, almost 40 percent of the area covered by the winter crops which had to be plowed under this year in the South Moravia Kraj, was planted upon completion of the sugar beet harvest. Violation of the crop rotation principle can in no case be considered a solution. It is necessary to find an optimal way in a well unified harvest and well-thought-out plan of varietal structure. Use of Mironovskaya can be also helpful since this variety can be generally satisfactorily planted even within the latest dealine possible. Nevertheless, no one should misuse it.

Do not leave for tomorrow whatever you can do today. This ancient people's wisdom has been repeatedly affirmed by experiences of human life, and thus it may be considered almost a law. And it is twice as valid for farmers in the fall. People who follow it usually do not have to be sorry about results. In most cases they are not forced to consider any type of deadlines a "problem." As far as agronomical deadlines are concerned, they should bring any kind of problem except to hesitant sluggards who are looking for excuses rather than means of meeting them, and who are misusing all possible objective reasons only in order not to be forced to think and to solve problems in a responsible manner.

INNER-GERMAN TRADE AT HALF-YEAR MARK ANALYZED

Bonn INFORMATIONEN in German No 13, Aug 79 pp 20-21

[Documentation report by FRG Ministry for Inner-German Relations based on PRESSEMITTEILUNG (Press Bulletin), issued by FRG Minister for Economics, 24 Aug 79: "Inner-German Trade"]

[Text] Compared to last year German internal trade in the first 6 months of 1979 developed as follows:

	In millions VE		
	First 6 months		Changes over
	1978	1979	last year
Deliveries to GDR	2,247.0	2,086.3	- 7.2%
Acquisitions by GDR	2,060.2	2,158.1	+ 4.8%
	4,307.2	4,244.4	- 1.5%

The overall result is essentially characterized by a reduction of our deliveries caused clearly by the termination of capital goods transactions concluded with the GDR in 1975 in the amount of about 1.3 billion VE [accounting units] and also by the obviously more difficult economic situation in the GDR whose growth in the first 6 months of 1976 probably lags behind the goal set by the plan which is certainly due also to the effects of the severe winter. Should economic growth accelerate again in the second half of 1979 the internal German trade might perk up.

The fact that the so-called basic trade acts as a stabilizing factor must be viewed as a positive sign: In the case of most merchandise categories only small fluctuations occurred in both directions with positive changes predominating on the supplier part, in contrast to the overall trend.

As a result of the disparate development of deliveries (-7.2%) and acquisitions (+4.8%) the GDR achieved a trade balance surplus of 72 million VE. Consequently, compared with the balance at the end of 1978 (3.67 billion DM), the overall active balance (balance of mutual obligations including swing claims) declined slightly (by the end of June 1979: approximately

3.57 billion DM) including payments effected in free DM by way of the S account.

On the supply side the following changes occurred in the 10 most important merchandise categories:

	First 6 months 1978	First 6 months 1979	Changes over last year in millions VE	Changes over last year in percent
	In millions VE			
Chemicals	386.4	399.6	+ 13.2	+ 3.4
Machinery, electrotechnical products	631.3	318.9	- 312.4	- 49.5
Iron and steel; steeldrawing and cold rolling mill products	172.4	182.2	+ 9.8	+ 5.7
Mining machinery	63.8	166.1	+ 102.3	+ 160.3
Agricultural and silvicultural products	159.3	160.5	+ 1.2	+ 0.8
Crude oil	168.6	128.7	- 39.9	- 23.7
Textiles, clothing	119.0	115.1	- 3.9	- 3.3
Nonferrous metals	48.8	89.5	+ 40.7	+ 83.4

The overall decline in deliveries is due almost exclusively to the sharp reduction in the field of machine building and electrotechnical products (-312 VE). This was caused by a more than two-third reduction in the volume of deliveries of capital goods: In the first half of 1978 deliveries amounted to 295 million VE, in the first half of 1979 to only 79 million VE. But several medium-sized capital goods transactions concluded in the second half of 1978 and the beginning of 1979 are expected to bring a slight pickup of our deliveries in the second half following the sharp decline in the first 6 months of this year. Still, due to the absence of supplemental capital goods orders, the 1979 trade volume will remain well below that of recent years.

In view of the decline in sales of machinery and electrotechnical goods chemical products became again the most important trade item of supply as before 1976 with inorganic raw materials weighing heavily among the deliveries to the GDR.

The supplier has gained a partial compensation in positive direction by supplemental deliveries of bituminous coal (+102 million VE) since the beginning of the year due to energy shortage in the GDR. Here prospects remain good also for the future.

The disproportional rise in nonferrous metals is essentially the result of price increases on raw material markets.

With small changes the other merchandise categories present a picture which is not unfavorable: 10 types of merchandise with positive rates of increase

confront 10 merchandise types with declining rates. The sharp sales increase in the category "Leather and Shoes" is encouraging. This is obviously the result of cooperation agreements between enterprises which led to increased deliveries of materials for shoe production.

The most important acquisition categories have changed as follows:

	First half of 1978	First half of 1979	Changes over preceding year	Changes over preceding year
	In millions VE		in millions VE	in percent
Mineral oil products	284.2	398.8	+ 114.6	+ 40.3
Textiles and clothing	376.4	331.4	- 45.0	- 12.0
Agricultural and silvicultural products	333.6	320.3	- 13.3	- 4.0
Chemical products	174.8	172.7	- 2.1	- 1.2
Machinery, electrotechnical products	133.4	139.3	+ 5.9	+ 4.4
Iron and steel, steel-drawing products	76.6	107.6	+ 31.0	+ 40.5
Wooden products	92.7	99.1	+ 6.4	+ 6.9
EBM (Iron, Sheet Iron and Metal Goods) products	51.0	60.5	+ 9.5	+ 18.6

The overall increase in purchases in the amount of 98 million VE is due to the disproportional rise in the mineral oil category. But since the volume remained almost the same as last year the rise is due entirely to the price increase which occurred in the interim period.

The changes in the other categories are within limits with the exception of the Iron and Steel category where GDR sales increased by 40 percent and the Textile and Clothing category; here the decline may reflect increased competition from third countries, potentially also increased domestic consumption in the GDR.

8664
CSO: 2300

FOREIGN TRADE SEEN HAVING STOPGAP FUNCTION

Duesseldorf HANDELSBLATT in German 7-8 Sep 79 p 14

[Article by H.D.S., Berlin: "Imports Have To Play a Stopgap Role"]

[Text] Owing to the price shifts on the world markets, foreign trade has in the second half of the seventies had a braking rather than a promoting effect on the growth of the GDR economy. This is the conclusion reached by an investigation of the Bundesinstitut fuer ostwissenschaftliche und internationale Studien [Federal Institute for East European and International Studies].

Even though the territory of the present-day GDR has traditionally been strongly oriented towards foreign trade, its current degree of involvement in external economic engagements would have to be characterized as "relatively low." Imports are noted to have primarily a "stopgap function." The report observes that they have been increased especially strongly every time when in the preceding year the growth of industrial production in the GDR had declined. On the other hand the development of exports visibly depended much less on the state of domestic production than on the receptiveness for imports in foreign countries. Exports are said to serve above all as an instrument for the provision of foreign currency.

According to the report of the Cologne Bundesinstitut, the foreign trade of the GDR will also in the future be shaped by the fact that the poor raw material endowment and the labor shortage will necessitate "increasing" raw material and machinery imports, which in turn will reenforce the need to export. The regional structure of the foreign trade relations of the GDR is determined by the political and economic integration into CEMA, the report notes.

Thus Foreign Trade Minister Horst Soelle writes in the East Berlin periodical HORIZONT that the striving to intensify this integration is the determining element for the GDR foreign trade. In this context specialization and cooperation pose "new demands with respect to quality and quantity of the mutual deliveries of commodities." Soelle points out that in 1980 at least 35 percent of the commodity exchanges with the Soviet Union is to be made up of products produced on the basis of specialization and cooperation agreements. In 1970 this share amounted to only 1 percent.

With a share of about 36 percent of the entire foreign trade of the GDR, the Soviet Union last year remained the most important trade partner of the GDR by far. According to Doelle one can "with justification speak of an ever tighter interlinking between the national economies of the GDR and the Soviet Union."

The trade with the industrial states of the West, the foreign trade minister writes, "is increasingly shaped by long-term industrial and technical relations, by various forms of industrial cooperation." In Soelle's opinion "important impulses" for the expansion of commercial relations issue from compensation agreements. These contracts have altered the structure of GDR exports to the western industrial countries to such an extent that now "more than one third" is made up of products of machinery and installation industry, electronics and electro-engineering and of the scientific instruments industry.

Soelle believes that "existing possibilities for a further expansion of relations cannot yet be fully utilized." He criticized the trade barriers and protectionist measures of Western industrial states and asked for the granting of most-favored-nation status. At the same time he announced the "further strengthening of the export capacity" of the GDR, the "raising of the effectiveness of exports and imports" and a more intensive cultivation of foreign markets.

Even though the latest Statistical Pocketbook of the GDR once gain provides only very incomplete information on foreign trade and, for instance, does not publish separate figures on the values of total imports and total exports, it nonetheless makes it clear that the slight reduction of turnover in intra-German trade in the first half of 1979 does not constitute a special development, but rather a belated adaptation to earlier trends in the world market trade of the GDR. According to the official GDR statistics, inner-German trade in 1978 was 8 percent larger than in 1976. By contrast the commodity exchanges with the other industrial states of the West had declined by 17 percent in these 2 years.

A more long-term comparison of the values of imports and exports in the total foreign trade of the GDR makes it understandable, why the party and state leadership is asking ever more urgently for the enlargement of exports and savings on imports.

9108
CSO: 2300

INTEREST SHOWN IN IMPORTING TECHNOLOGY

Bonn DIE WELT in German 3 Sep 79 p 9

[Article by Hans-J. Mahnke, Leipzig: "Great Interest on the Part of East Berlin in Importing Technology; Leipzig Fair, Energy Agreement With GDR To Ensure West Berlin Power Supply"]

[Text] A medium-term energy agreement is to be concluded between the Federal Republic and the "GDR." At the Leipzig Fall Fair, which was opened yesterday, it was said that the state secretary in the [Bonn] Ministry of Economics, von Wuerzen, will sign an agreement to this effect on Tuesday. This is to provide a longer-term basis for the crude oil deliveries from the FRG and for the sales of petroleum products to Berlin above all. The atmosphere at the opening of the fair was pronouncedly good.

The crude oil deliveries from the FRG to the "GDR", which had been rising strongly in some of the preceding periods, dropped by 23.7 percent to 128.7 million marks in the first 6 months of this year. Experts point out that in view of the price increases which occurred the decline in the volume of deliveries must have been considerably greater. On the other hand, however, the "GDR" has this year already bought DM 166.1 million worth of coal in the FRG, above all hard coal, whereas in the same period of 1978 these purchases had amounted to only DM 63.8 million. The "GDR" has an interest in providing for the continuity of these deliveries through a framework agreement.

At the same time--and this is where the interest of the FRG lies--the deliveries of petroleum products, which above all go to [West] Berlin, are to be determined contractually in a corresponding manner. These deliveries from the "GDR" have risen in the first half of this year by 40.3 percent, to 398.8 million marks. The increase, however, derived almost entirely from the rise in prices. The "GDR" supplied 297.2 million marks worth of diesel fuel, 55.5 million marks worth of gasoline and 46.1 million marks worth of other petroleum products.

According to our informations the package of agreements is to be valid for a period of 5 years and is to determine that 950,000 tons of crude

oil annually will flow from the FRG to the "GDR." In exchange the "GDR" is to deliver petroleum products of two to two-and-a-half times that volume. Beyond this the amount of West German coal deliveries is to be determined contractually. A volume of 250 million marks is under discussion.

During his visit at the fair exhibit of the BASF [Baden Aniline and Soda Factories], SED chief Erich Honecker constrained his remarks to the relationship with this enterprise, as was to be expected. Upon the observation during the welcoming by the BASF chief executive officer, Prof Matthias Seefelder, that the relationship is only this year recovering from the doldrums that set in in 1975, Honecker responded: "As you have already noted, there are peaks and lows, but we are after all striving for the next peak."

In the first 6 months of 1979 the BASF sales to the "GDR" have risen from 30 to 37 million marks in comparison to the same period of the preceding year. The purchases by BASF, at 12 million marks, were at approximately the same level as in the prior year. The overall business volume this year might possibly again reach the 1976 volume of 100 million marks.

The delivery position of the BASF is somewhat more favorable than that of the chem cal industry of the FRG as a whole, whose deliveries during the first half of the year rose by 3.4 percent to 399.6 million marks.

Seefelder proposed to Honecker improved cooperation in four areas: (1) An exchange of experts in the field of agriculture in order to obtain a better utilization of the products; (2) Cooperation in the field of thermal insulation for the sake of energy economies (the "GDR" is in the process of forcing the modernization of its pre-war housing stock); (3) Substitution of plastics for steel in automobiles; (4) More maritime transport for the "GDR" shipping enterprises.

A notable feature of this fair is that the firms from the Federal Republic have been given a large role in the specialized lectures and symposia which accompany the exhibitions. The experts in fair matters conclude from this that the "GDR" has a great interest in the import of technology.

9108
CSO: 2300

DEVELOPMENT OF OIL REFINING AT 'WALTER ULBRICHT' PLANTS DETAILED

Leipzig CHEMISCHE TECHNIK in German Vol 31 No 8, Aug 79 pp 390-394

[Report from VEB 'Walter Ulbricht' Leuna Plants by Harald Gebhardt, Wolfgang Nette and Erika Onderka, GDR Chamber of Technology: "Petroleum Refining at VEB 'Walter Ulbricht' Leuna Plant." Manuscript received 6 March 1979]

[Text] Since 1927, fuel production in the Leuna plants has been done with the use of high-pressure hydrogenation processes. The limited raw material base for petroleum in Germany, coupled on the one hand with the pessimistic assessments of world petroleum supplies and on the other hand with efforts by German monopolies to become self-sufficient, were the decisive reasons for paying increased attention at the beginning of the 1920's to Bergius' writings on "coal liquefaction."

After appropriate experiences in the areas of high-pressure technology and the use of catalysts had been gathered up to the mid-1920s, it was decided in 1926 to build a large experimental plant to produce 100,000 tons of gasoline per annum using brown coal as the basis. The plant, which was to produce gasoline using the Bergius process and which started operation the following year, operated under high-pressure conditions (235 at $\hat{=}$ 23.5 MPa) in two stages; the middle oils formed in the first stage of the process, the semisolid phase, were converted into gasoline in the second stage, the so-called "gas phase." Nonetheless, it soon became apparent after the plant was put into operation that a number of technical and technological problems were unsolved, which specifically concerned the use of suitable materials for the high-pressure equipment, the gasoline yields, which were too small, and the frequent coking in ovens.

In the course of time, well-directed research efforts had made it possible to develop pressure hydrogen-resistant materials and suitable catalysts, which resulted in a substantial increase in enterprise safety, in increasing throughput capacity and in improving gasoline quality. Thus, over the years, hydrogenation of coal was developed into a technically perfected process which has permitted the production of more than 500,000 tons of fuel per annum in Leuna.

Development of Petroleum Refining in Leuna After 1945 to the Mid 1970s[1]

After the end of World War II, the plants that had been destroyed in the war were rebuilt and put into operation to hydrogenate brown coal and tars. The good friendly relations between the GDR and the Soviet Union made it possible, starting in 1951, to use Soviet petroleum to an increasing extent. In this regard, economic viewpoints were decisive for the fact that the technically and economically very costly plants for high-pressure hydrogenation of brown coal were converted to this new raw material base. When the last functioning coal chamber was shut down in 1959, it was possible to complete this production conversion process (Figure 1).

In this shift to petroleum refining the most essential plants were again put to use. The changes in the process provided favorable opportunities for comprehensive reconstruction and rationalization of the overall process of fuel production, especially for increasing the capacity of the plants and improving the quality of the fuel.

The petroleum-refining technology described in the following is illustrated in Figure 2 as a simplified flow chart. A rebuilt plant, which was used to distill the reaction product from the previous coal-semisolid phase-chambers, is used to distill petroleum. Supplementing this plant with existing distillation systems, it was possible to produce specific distillation cuts from petroleum. In the former coal chambers, which were reequipped as petroleum chambers, a hydrocatalytic high-pressure process is used to crack atmospheric residue into products in the gasoline and diesel oil distillation range. Winkler powder, which has been soaked with iron sulfate solution, serves as the catalyst; after it has been added to the injection product, it passes through the high-pressure chambers and is continously discharged from the process as sludge to be used for heating purposes.

In distilling the reaction product from the petroleum chambers, heating oil is produced as a residue, which the head production (fraction < 350°C) must be subjected to catalytic high-pressure refining because of its high content of heterocompounds.

The prehydrogenation chambers, which were used in the coal hydrogenation process and which operate with fixed-bed catalysts, are used to do this.

In the subsequent distillation, the reaction product from the prehydrogenation chambers is broken down into a highly-refined diesel fuel fraction, light gasoline and heavy gasoline. The latter comprises the feedstock for the L-forming plants which were put into operation in 1959 and 1965 to raise the octane number of motor gasoline and which are based on process and catalyst developments at the VEB "Walter Ulbricht" Leuna plants. In addition to butane and C_5^+ hydrocarbons, liquid gases are produced as valuable gasoline components from the gases which accumulate in substantial quantities during the process of petroleum refining.

In the mid-1950s, the first petrochemical complex in the GDR was put into operation in the VEB "Walter Ulbricht" Leuna plants. The resultant technological connection with petroleum refining decisively determined, from that point on, the technological profile of the combine. Crude gasoline fractions are made available from petroleum refining for the ethylene systems, while the pyrolysis gasoline in the petroleum refining plants, which accumulates during pyrolysis, is upgraded to the benzene cut and high-octane motor gasoline components.

In line with the technology depicted, a petroleum throughput of about 2 million tons per annum was achieved at the beginning of the 1970s; thus, without new capital investments, production became possible that was about four times greater vis-a-vis the technology of high-pressure hydrogenation of brown coal.

Ways for More Intensive Utilization of the Raw Material Petroleum in Leuna

Because of the limited petroleum reserves and the concomitant fact that petroleum as a raw material can be made available only to a limited extent, it is a fundamental economic requirement for the GDR, a country poor in raw materials and in particular one that also does not have any significant oil deposits of its own, to make optimal use of petroleum, as regards material management, as an imported raw material. Using these considerations as a point of departure, an extensive reconstruction and intensification program for the gradual expansion of petroleum refining was set up for refining petroleum in the VEB "Walter Ulbricht" Leuna plants. A definite improvement in working and living conditions for the workers in this production branch is closely linked with this technological reorganization.

Greater refining of petroleum with the target of maximum production of motor gasoline is based on the introduction of hydrocracking processes into the technology of petroleum refining. In this regard, the following procedures are utilized:

--Intensified residue cracking through the production of vacuum distillate and hydrocatalytic cracking of the vacuum distillate into light products;

--Cracking gas oil into benzine hydrocarbons.

The technological changes presuppose:

--Practical experiences and a scientific-technical lead in the areas of hydrogenation and hydrocatalytic cracking of hydrocarbons;

--Use of existing high-pressure capacities for cracking processes and renewal of existing basic assets with simultaneous introduction of efficient technological methods and forms of organization.

Intensification of petroleum refining is being done according to the individual steps described below, so that after completing the projects planned, the technology reproduced in Figure 3 will be available:

--Capacative expansion of primary petroleum refining

In the mid-1970s, the capacity limit of the distillation plants for petroleum had been reached with about 3.5 millions of petroleum throughput per annum, so that for the additional planned increase in petroleum refining a modern atmospheric petroleum distillation plant with a capacity of about 5 million tons per annum was built. The distillation plant, which was put into operation in 1977 and built by the Chemical Installations Construction Combine VEB, Leipzig-Grimma, completely replaces the distillation complex which up to that time was costly to operate and which consists of several individual plants.

--Expansion of the refining capacity for diesel oil

With the increase in petroleum refining it is essential to expand the refining capacity for diesel oil. That can simultaneously accommodate increasing consumer demands on the quality of diesel fuel. At present, therefore, a diesel fuel refining plant that works under average pressure conditions and has a capacity of 600,000 tons per annum is being built by the "Karl Liebknecht" Heavy Machine Construction Plant VEB, Magdeburg (SKL).

--Replacing the petroleum residue cracking process by hydrocracking the vacuum distillate

The Leuna process being used to accomplish this was preceded by extensive research work on the process and on catalyst development. The essential point in replacing the cracking process of petroleum residues by hydrocracking of the vacuum distillate was the construction of a vacuum distillation plant and the reoutfitting of existing high-pressure plants for vacuum distillate hydrocracking chambers. The hydrocracking of vacuum distillate takes place in the presence of hydrogen with a fixed-bed catalyst. Compared with the process of petroleum residue cracking, the advantages lie in the roughly 50-percent higher throughput capacity with an equal reactor volume and in the immediate yield of refined intermediate and finished products.

--Hydrocracking gas oil fractions into benzine hydrocarbons

The technical realization of this process, which was developed from our own research results, took place in 1972 in order to meet the increased demand for high-octane motor gasolines. Together with the expansion of the reforming capacity, this process contributed substantially to increased production of high-octane motor gasolines; this is clear from Figure 4.

--Expansion of the reforming capacity

The substantially higher proportion of gasoline components which can be obtained through intensification measures requires, in combination with the production of predominantly high-octane motor gasoline grades, the building of a new reformer--refining 5 million tons of petroleum per annum produces roughly the same amount of gasoline as the refining of 8 million

tons of petroleum per annum would produce if the cracking process had not been introduced. This installation, with a capacity of 500,000 tons per annuam, is being built now by the SKL VEB, Magdeburg, modeled on a process of the Schwedt Petrochemical Combine VEB.

--Expansion of gas purifying capacities

The main goal is full production of high-octane gas benzines from the rather large accumulations of let-down gases.

Intensification of petroleum refining in the manner described above is presently being implemented and, according to the plan, will be completed by the mid-1980s. Thus, Leuna will have a modern petroleum refinery in keeping with the international trend, with a capacity of 5-6 million tons of petroleum throughput per annum; it is characterized by the following features:

--Extensive use of hydrocracking processes in existing basic installations following the Leuna process;

--Operation of modern plants with a high capacity for atmospheric distillation, vacuum distillation, medium-pressure diesel fuel refining and reforming, which basically were built by GDR chemical installations construction;

--Production of qualitatively high-value finished products;

--Close integration with Petrochemistry.

As is clear from the overview below, the expansion of petroleum refining, which was accomplished with intensification measures, results in a definite shift vis-a-vis the assortment of products provided by the natural composition of petroleum. It shows the strong decrease in residues which are to be provided for caloric utilization and, as a correlate, the percentage rise in the yield of "light" products (Table 1).

Scientific-Technical Results Form the Basis of Planned Production Development

Considerable importance attaches to research and development in the process of reshaping the technology of petroleum refining. Research work was and is purposefully oriented toward raising the quality of finished products, improving material economy, decreasing the susceptibility to trouble in the plants, improving working and living conditions and raising the efficiency of petroleum refining. As a result of this, processes were developed at the VEB "Walter Ulbricht" Leuna plants, among others, which were introduced on a large-scale technical basis in the combine and have demonstrated their value.

Processes for Hydrocracking Distillates

In order to be able to shift the natural fraction distribution of petroleum in favor of the gasoline fraction, we have several technical processes

available to choose from. Without a doubt, in this regard, hydrocracking processes offer a number of advantages in terms of a higher yield of light products and higher quality in the reaction products, but they do require the use of high-pressure systems and the availability of hydrogen. Both conditions were present in the VEB "Walter Ulbricht" Leuna plants, so that on a short-term basis developmental work was initiated which involved hydrocracking distillates for the purpose of additional production of high-octane light gasoline and heavy gasoline as a reforming feedstock. In 1972 it was possible, in a rebuilt high-pressure refining plant, to gather initial large-scale technical experiences in the hydrocracking of unrefined middle distillates, using a molecular sieve catalyst of the type Kt. 9531. Carefully directed further development in technology and catalysts brought about the realization of a process in the VEB "Walter Ulbricht" Leuna plants which permits the use of a broad assortment of unrefined fractions in the distillation range of 100-360°C--this is based on the structure of consumer demand for finished products, the raw material situation and the availability of plants that are coupled in before and after; and it also permits the production of reaction products with varying proportions of cracked products.

Table 2 shows characteristic values of several products which are used on a large-scale technical basis under hydrocracking conditions (see Table 3); Table 4 shows the quality of the products thus obtained.

The process is characterized by high volume velocities, extremely high resistance to aging by the catalysts (about 4 years service life without regeneration), good refining performance and low susceptibility to trouble. Hydrogen consumption amounts to 130-260 m^3 at standard state per ton of feedstock depending on the feedstock and end product. Introducing this process into the technology of petroleum refining in Leuna brought about a definite change in the diesel fuel-motor gasoline ratio. A shift in the ratio between heating oil and light products in favor of the latter is accomplished by hydrocracking the vacuum distillate. The scientific-technical development work on this resulted in a process for hydrocracking the vacuum distillate which was realized on a large-scale technical basis in Leuna in rebuilt petroleum chambers. The characteristic values of the feedstock, the operation parameters and the characteristic values of the reaction products are given in Tables 2, 3 and 4.

It can be seen from the technological diagram (Figure 5) that the catalyst is arranged in stages in order to control the strongly exothermic process. The hydrogen consumption amounts to about 255 m^3 at standard state per ton of feedstock. The resulting heavy gasoline fraction is a good reforming product. The diesel oil fraction is characterized by a high degree of refining and good behavior in cold.

Process for Selective Hydrogenation of Pyrolysis Gasoline[2]

A characteristic feature of the petroleum refining technology in Leuna is, among other things, its integration with petroleum chemistry. Straight-run gasoline fractions are made available through petroleum refining for pyrolysis, and the pyrolysis gasolines which result from pyrolysis are in part fed back into motor gasoline production.

This presupposes, however, stabilization of the high concentration of diolefins, styrenes and their homologues through selective hydrogenation.

For this process stage, palladium catalysts (Kontakt 7761 or 7762) are used in the process licensed by the VEB "Walter Ulbricht" Leuna plants. This type of catalyst, given mild reaction conditions (reactor input temperature about 30°C at the beginning of the processing period) and high volume velocities, guarantees high selectivity and long periods of operation. A plant using this processing principle has been operating in Leuna since 1966. Operating experiences over a period of several years show the process to be technically uncomplicated and reliable. Throughputs up to the required regeneration of 15 t/kg of catalyst were achieved.

The stabilized reaction product can now undergo further refining. A benzol fraction and valuable motor gasoline components are obtained from this product in the VEB "Walter Ulbricht" Leuna plants.

The benzol fraction is completely refined to remove the olefinic and sulfur compounds that disturb further processing, using a nickel-molybdenum catalyst with reactor input temperatures between 240 and 280°C and the pressure below 5.0 MPa (≙50at). Characteristic data about the feedstock and hydrogenation products can be obtained from [2].

Another plant that operates on the Leuna process and was built by the VEB SKL, Magdeburg, has been in operation since 1975 in the "Otto Grotewohl" Combine VEB. The technological diagram of the plant is given in [2]. In contrast to the technology introduced in the VEB "Walter Ulbricht" Leuna plants, a refined BTX-fraction for the production of aromatics is produced here in addition to motor gasoline components. The plant likewide operates with extraordinary reliability and great flexibility.

Ideas for Further Expansion of Petroleum Refining in the VEB "Walter Ulbricht" Leuna Plants

When contemplating the future shape of petroleum refining, as an additional goal consideration must also be given to optimal use of the valuable raw material petroleum for materials management. This is the source of the task to further reduce the proportion of heating oil in favor of "light" products. Basically, this problem can be solved by therml, catalytic and hydrocatalytic treatment of the petroleum residues.

Although the processes differ in regard to the achievable yields of "light" products, the technology selected and the yield of by-products and intermediate products, high investment and enterprise costs, complicated technical solutions and problems in the salvage of the by-products are characteristic of all methods of residue cracking.

Another way of solving the problem consists in introducing methods for altering the viscosity of the vacuum residue. As a rule this must be

mixed with low-viscosity heating oil components, such as vacuum distillate, cycle oils and the like, in order to obtain a heating oil with adequate utility value properties. These additive components, in contrast to residue products, are better suited to cracking refining as a result of their low asphalt and metal content.

With the introduction of a visbreaking process into the technology of petroleum refining, it is possible to decisively change the viscosity of the vacuum residue through thermal treatment; this technical solution is uncomplicated and causes relatively low investment and enterprise costs.

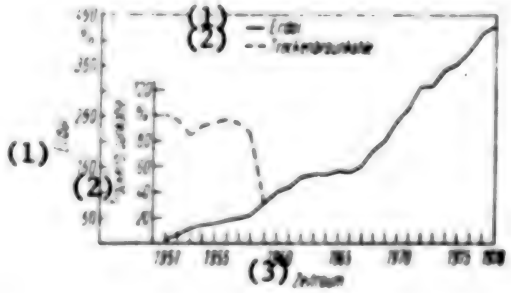
Using the example of the VEB "Walter Ulbricht" Leuna plants, Figure 6 shows how one such process could be integrated into the technology of petroleum refining. As a result, a further lowering of the proportion of heating oils to about 18 mass-percent, if petroleum is used as the feedstock, can be achieved.

Summary

A characteristic feature of the technological solutions presented, after the replacement of coal hydrogenation, is the use of existing basic assets to introduce modern hydrocatalytic cracking processes to achieve more intensive utilization of the raw material petroleum.

Following completion of the intensification measures, the yield of gasoline per ton of petroleum used will increase to 32 mass-percent. Beyond that, ideas are being put forth about lowering the proportion of heating oil further in favor of "light products" to about 18 mass-percent.

Figure 1. Development of the Use of Petroleum and Dry Brown Coal for Fuel Production in Leuna

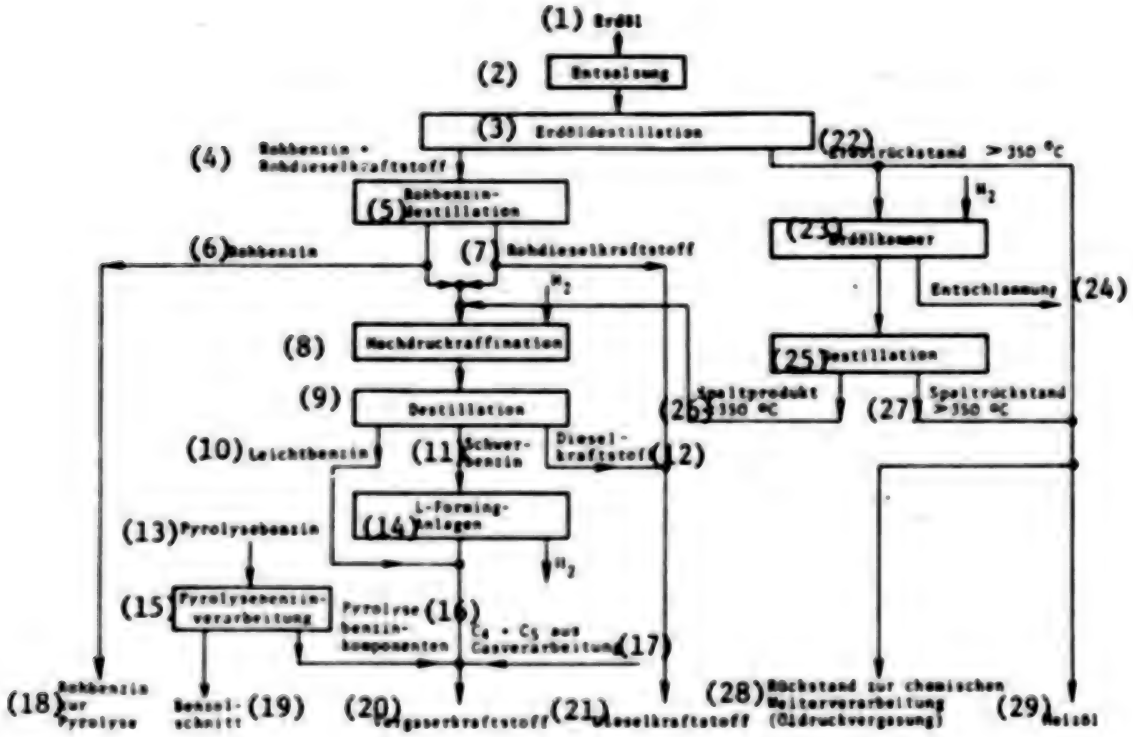


Key: 1. Petroleum

2. Dry Brown Coal

3. Time

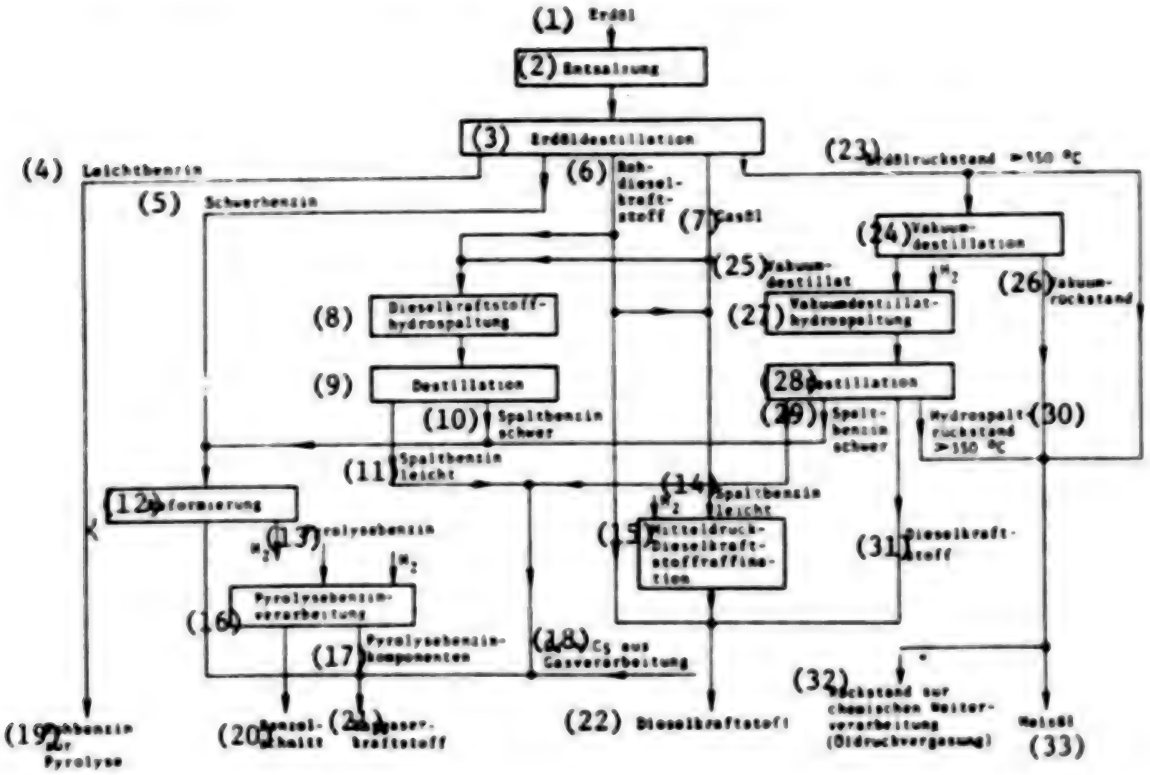
Figure 2. Simplifed Diagram of the Technology of Petroleum Refining in Leuna Following Cessation of Coal Hydrogenation



Key:

1. Petroleum
2. Desalting
3. Petroleum distillation
4. Crude gasoline + crude diesel fuel
5. Crude gasoline distillation
6. Crude gasoline
7. Crude diesel fuel
8. High-pressure refining
9. Distillation
10. Light gasoline
11. Heavy gasoline
12. Diesel fuel
13. Pyrolysis gasoline
14. L-forming plants
15. Pyrolysis gasoline refining
16. Pyrolysis gasoline components
17. C_4 + C_5 from gas purification
18. Crude gasoline for pyrolysis
19. Benzene cut
20. Motor gasoline
21. Diesel fuel
22. Petroleum residue > 350°C
23. Petroleum chamber
24. Desludging
25. Distillation
26. Cracked product < 350°C
27. Cracked residue > 350°C
28. Residue for further chemical processing (oil pressure-vaporization)
29. Heating oil

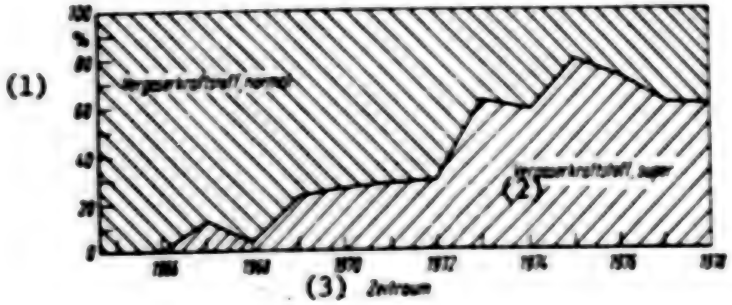
Figure 3. Simplified Diagram of the Technology of Petroleum Refining in Leuna Upon Completion of the Intensification Projects



Key:

1. Petroleum
2. Desalting
3. Petroleum distillation
4. Light gasoline
5. Heavy gasoline
6. Crude diesel fuel
7. Gas oil
8. Diesel fuel hydrogenation
9. Distillation
10. Cracked gasoline heavy
11. Cracked gasoline light
12. Reforming
13. Pryolysis gasoline
14. Cracked gasoline, light
15. Medium-pressure diesel fuel refining
16. Pyrolysis gasoline refining
17. Pyrolysis gasoline components
18. $C_4 + C_5$ from gas purification
19. Crude gasoline for pyrolysis
20. Benzene cut
21. Motor gasoline
22. Diesel fuel
23. Petroleum residue >350°C
24. Vacuum distillation
25. Vacuum distllate
26. Vacuum residue
27. Vacuum distillate hydrocracking
28. Distillation
29. Cracked gasoline, heavy
30. Hydrocracked residue >350°C
31. Diesel fuel
32. Residue for further chemical processing (oil pressure-vaporization)
33, Heating oil

Figure 4. Percentage Distribution of Motor Gasoline Production at Leuna, In Terms of Gasoline Grades "Normal" and "Super"



Key:

1. Motor gasoline, normal
2. Motor gaosline, super
3. Time

Table 1. Proportions of Products Obtained for the Technologies Presented in Figures 2 and 3, in Percent of Petroleum Used

(1)	(2) Benzin	(2) Dieselöle	(3) R 1	(4) R 2	(5) Flüssiggase	(6) Gase zur kalorischen Verwertung
(7) Zusammensetzung des Erdöles	18	28	—	52	1	—
(8) Erdölverarbeitung gemäß einer Technologie Bild 2	21	29	4	40	3	3
(9) Erdölverarbeitung gemäß der angestrebten Technologie Bild 3	32	25	4	31	3	4

(10) R 1 Rückstände > 350 °C zur chemischen Weiterverarbeitung
(11) R 2 Rückstände > 350 °C zur kalorischen Verwertung

Key:

1. Gasoline
2. Diesel oils
3. R 1
4. R 2
5. Liquid gases
6. Gases for caloric use
7. Composition of petroleum
8. Petroleum refining according to a technology, Figure 2
9. Petroleum refining according to the desired technology, Figure 3
10. R 1 Residues $>$350°C for further chemical refining
11. R 2 residues $>$350°C for caloric use

Table 2. Characteristic Values of Products Used for Hydrocracking, On a Large-Scale Technical Basis

(1) Kennzahlen	(2) Einsatzprodukt A	B	C	D	E
(3) Dichte D_4^{20}	0,783	0,744	0,828	0,789	0,900 (bei 50 °C)
(4) Basen in mg NH_3/l	21,0	0	30,0	318,0	350,0
(5) Schwefel in Masse-%	0,68	0,009	0,81	0,27	1,8
(6) Siedeanalyse					
(7) AB in °C	115	105	170	37	350
(8) bei 100 °C in Vol.-%	—	—	—	14	—
(9) bei 180 °C in Vol.-%	43	90	1	55	—
(10) bei 350 °C in Vol.-%	95	—	94	96	—
(11) (bei 340 °C)				(15) (bei 340 °C)	
(12) bei 500 °C in Vol.-%	—	—	—	—	90
(13) EB in °C	343	186	360	344	—

(16) A: Straight-run-Fraktion 100 ... 350 °C (gerader Durchgang)
(17) B: Fraktion 100 ... 180 °C (Kreislaufbetrieb)
(18) C: Straight-run-Fraktion 180 ... 360 °C (gerader Durchgang)
(19) D: Fraktion AB 350 °C aus Sekundärprozessen (gerader Durchgang)
(20) E: Vakuumdestillat 350 ... 500 °C (gerader Durchgang)

Key:

1. Characteristic Data
2. Feedstock 20
3. Density D_4
4. Bases in mg NH_3/l
5. Sulfur in mass-percent
6. Boiling analysis
7. Initial boiling point in °C
8. At 100°C in vol.-percent
9. At 180°C in vol.-percent
10. At 350°C in vol.-percent
11. (At 340°C)
12. At 500°C in vol.-percent
13. Final boiling point in °C
14. (At 50°C)
15. (At 340°C)
16. A. Straight-run fraction 100...350°C (straight passthrough)
17. B. Fraction 10...180°C (circulating system)
18. C. Straight-run fraction 180...360°C (straight passthrough)
19. D. Fraction initial boiling point 350°C from secondary processes (straight passthrough)
20. E. Vacuum distillate 350...500°C (straight passthrough)

Table 3. Large-Scale Technical Operating Conditions for the Hydrocracking Process With Different Feedstocks

(1)	(2)	A	B	C	D	E
(3)						
(4)						
(5)						
(6)						
(7)						
(8)						

Key:

1. Conditions
2. Feedstock (see Table 2)
3. Catalyst
4. Pressure in MPa
5. Load in v/v·h
6. Maximum temperature in °C
7. Gas-product ratio at reactor input in m^3 standard state/m^3
8. Specified cracking degree per throughpass in vol.-percent

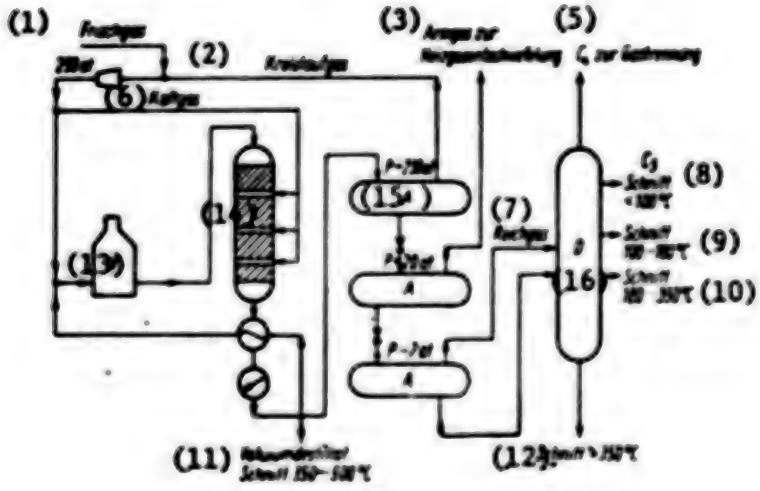
Table 4. Characteristic Values of the Reaction Products in Hydrocracking Distillates

(1)	(2)	A	B	C	D	E
(3)						
(4)						
(5)						
(6)						
(7)						
(8)						
(9)						
(10)						
(11)						
(12)						
(13)						
(14)						
(15)						
(16)						
(17)						

Key:

1. Characteristics values
2. Feedstock (see Table 2)
3. Light gasoline fraction
4. Yield in mass-percent, based on feedstock
5. Final boiling point in °C
6. Heavy gasoline fraction
7. Yield in mass-percent
8. Sulfur content in ppm
9. N-bases in mg NH_3/l
10. Aromatics in vol.-percent
11. Naphthenes in vol.-percent
12. Diesel oil fraction
13. Yield in mass-percent
14. S-content in mass-percent
15. BPS point in °C
16. Setting point in °C

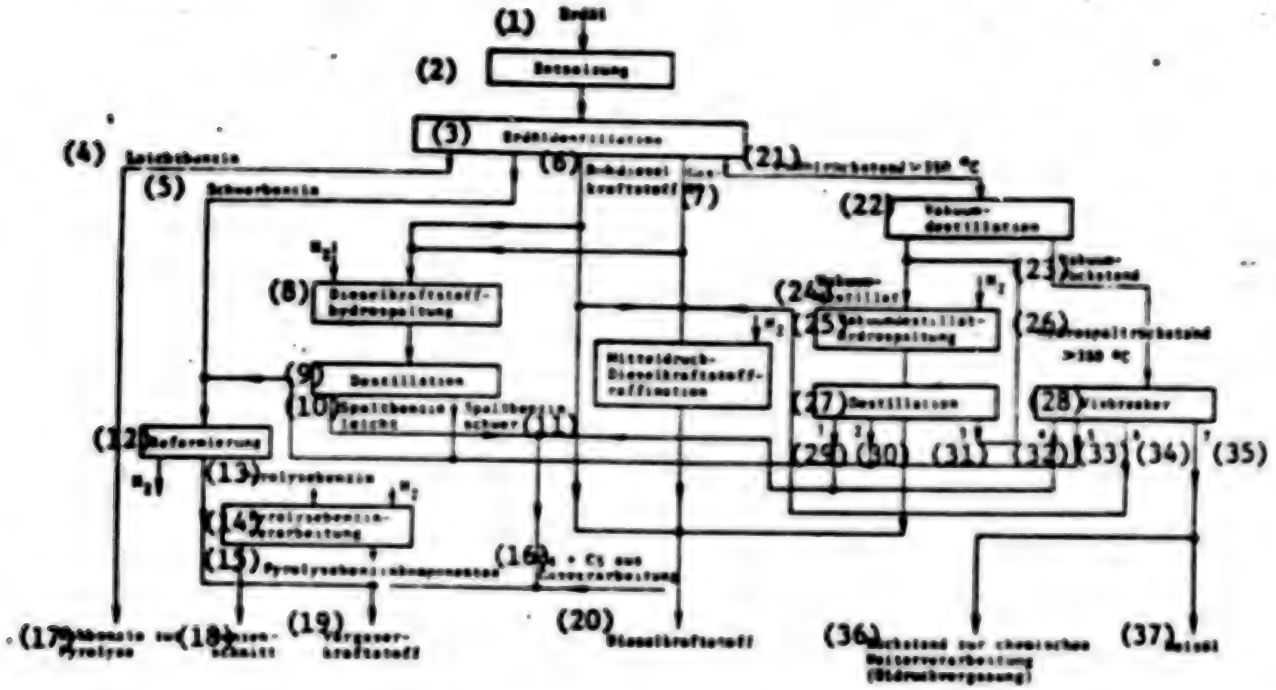
Figure 5. Hydrocracking of Vacuum Distillate, Technological Diagram



Key:

1. Fresh gas
2. Circulating gas
3. Lean gas for desulfurization of heating gas
5. C_4 for gas separating
6. Cold gas
7. Rich gas
8. C_5 Cut $<100°C$
9. Cut 100···180°C
10. Cut 180···350°C
11. Vacuum distillate cut 350···500°C
12. Cut $>350°C$
13. V Preheater
14. R Reactor
15. A Separator
16. D Distillation column

Figure 6. Possible Technology of Further Intensification of Petroleum Processing in Leuna, From the Mid-1980s



Key:

1. Petroleum
2. Desalting
3. Petroleum distillation
4. Light gasoline
5. Heavy gasoline
6. Crude diesel fuel
7. Gas oil
8. Diesel fuel hydrocracking
9. Distillation
10. Cracked gasoline light
11. Cracked gasoline heavy
12. Reforming
13. Pyrolysis gasoline
14. Pyrolysis gasoline refining
15. Pryolysis gasoline components
16. $C_4 + C_5$ from gas purification
17. Crude gasoline for pyrolysis
18. Benzol cut
19. Motor gasoline
20. Diesel fuel
21. Petroleum residue > 350°C
22. Vacuum distillation
23. Vacuum residue
24. Vacuum distillate
25. Vacuum distillate hydrocracking
26. Hydrocracking residue
27. Distillation
28. Visbreaker
29. 1. Cracked gasoline, light
30. 2. Cracked gasoline, heavy
31. 3. Diesel fuel
32. 4. Cracked gasoline, light
33. 5. Cracked gazoline, heavy
34. 6. Diesel fuel
35. 7. Visbreaker residue
36. Residue for further chemical refining (oil pressure vaporization)
37. Heating oil

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BUSZAR ADDRESSES INDUSTRIAL STATISTICIANS, ECONOMISTS

Budapest NEPSZABADSAG in Hungarian 18 Sep 79 p 3

[Unattributed article: "Our Sources and Reserves Have To Be Utilized Everywhere: The 10th Congress of Industrial Statisticians and Economists Begins"]

[Text] The 10th meeting of industrial statisticians and economists commences at Byor on Monday in the Raba Co Cultural Center. Scheduled is a discussion on the tasks connected with the modernization of industrial and construction structure and better exploitation of the reserves of the economy. The 3-day meeting, sponsored by the Hungarian Society for Economic Sciences, has several hundred participants who represent companies and ministries. They were greeted by Bela Hary, first secretary of the Gyor-Sopron County MSZMP. Mrs Ferenc Nyitrai, state secretary and the vice president of the Central Statistical Office, opened the jubilee meeting.

Istvan Huszar's Talk

The meeting based its work on Istvan Huszar's talk (preprinted for the participants of the plenary meeting) on the exploitation of industrial reserves. The speaker, the deputy president of the Council of Ministers and the President of the National Planning Office, could not attend the meeting in person, due to other obligations that could not be postponed.

Productivity Reserves

Dealing with the first large group of reserves, the written lecture emphasized that industry increased production in the first half of 1979 but at a lower rate than previously and its personnel dropped more than the average drop during the Fifth Five-Year Plan. Productivity increase outpaced production increase: the per person output increased 4.9 percent in the first half of the year. Exploitation of our resources is proceeding well in this area in 1979.

The production level in our industry in 1978 was 60 percent higher than 8 years ago. In the 1971-1978 period, our lag lessened as against the

top European CEMA countries. In spite of that, the productivity of Hungarian industry, as seen by bilateral and multilateral comparisons, continues to lag behind those of the developed and less-developed European capitalist countries and some socialist countries.

International comparison shows that there are still very large reserves in the productivity of our industry. The much-reported tight labor situation is not due to lack of workers but to the low utilization of the employees.

New entries to the labor market should be steered into the service area; in industry the main task is to use its labor force in a more organized and effective fashion. One way to do this is to mechanize and coordinate auxiliary activities, especially material movement. Labor freed by this reorganization can be directed to other areas and work places.

Along with the mechanization of auxiliary activities, we have large reserves in the use of working time, shop and work organization and labor tied down by productive or nonproductive companies and fields. Some areas have already taken promising steps to explore and use these reserves; other areas have to carry out these steps in the future.

One of the most important reserves of our work force management is the determined increase in incentive functions of the wage policy: moderation of "equality" and the increased validation of differentiation of wages for work done. In spite of resolutions and guidelines, we have actually done very little in this area.

A special area of reserves consists of the possibilities to improve the pace of production. General attempts to increase effectiveness and work organization did not bring fundamental changes in the past in increasing productivity and work organization. The extraordinarily uneven product release is illustrated by the fact that the December, 1978 production exceeded that of January 2.5-fold in the instrument industry, 2.3-fold in the telecommunications and vacuum-technical products industry, and double in the machine industry.

The greatest loss in the production companies is due to the uneven load placed on labor and equipment. The number of employees and machine capacity fit for peak production times is not fully utilized in the wave troughs. This influences wages, amortization, fringe benefits and work discipline to our disadvantage. Another negative effect is that rejected products increase during peak worktime and overtime.

Material and Energy Saving

The quality of products should not be neglected while we examine reserves. Good quality is the basic criterion of the product's competitiveness and

can be regarded as a significant base for saving material and labor. Part of our resources is still wasted on rejects and this sort of waste is growing.

Hungarian industry, due to the technical level of its products and production structure, is quite labor intensive. We spend 67 forints in materials for every 100 forinb of product value in the Fifth Five-Year Plan. In industry, 41-42 percent of the cost of materials and energy is imported. Hence this area offers possibilities for better management and the exploration of domestic reserves because even small savings can bring millions to the economy.

New views, management attitudes and a venturesome posture are needed to explore these reserves. Companies should get a direct incentive for economy, improvement of warehousing and restructuring production through the increased material and energy costs. This is the direction for the 1980 price changes to take.

One of the main economic tasks of any medium-developed country is the modernization and continuous development of industry's production structure. Its results will be the maximum satisfaction of domestic users and foreign customers with its industrial products. This will also satisfy the effectiveness requirements and balance exports and imports. Structure formation is especially important to a country such as ours whose size is relatively small, natural resources are limited and foreign trade is, necessarily, substantial.

Industry's structure has been modified, in the main, during the current five-year plan period, in accord with the trend of the previous five-year plan: the role of mining, metallurgy, light industry and food industry decreased, the electrical energy industry and the machine and chemical industry increased, and construction industry's role remained the same.

The Modernization of Product Mix

The main trends of change in area structure are similar to those of the other CEMA countries. Therefore, our interest must focus on product structure changes--which can take place quicker. The discussion-initiating paper gave a brief review of the product structure transformation results in iron metallurgy, aluminum, machine, chemical, drug, food, and light industries, and the circumstances blocking speedier progress. It emphasized that the decisive factor in the improvement of the economy's balance and the better exploitation of our reserves and resources in 1980 and the following years will continue to be the structural change of production.

During the new circumstances, communities which work economically, produce profit and show initiatives should enjoy greater advantages over those whose production is inferior.

Jozsef Drecin, vice president of the National Planning Office, gave a lecture related to Istvan Huszar's written lecture. He spoke of the importance of differentiating in practice between those reserves that naturally accompany economic progress and profitability and those which are simply due to bad work and organization because the latter can be ended relatively easily when the faults are corrected. The planned utilization of effectiveness resources is a heavier task. It demands good basis for decisions, the continuous modernization of product mix, increased knowledge of the market by companies and a heightened awareness of cost. On these, much help can be had by an accurate statistical picture of production and marketing costs and expert use of modern analytical methods.

The better foundation of decisions makes it necessary that not only the profitability of individual products be examined but, on occasion, that effectivity be analyzed as it involves the connections of several factories in a production branch.

Finally, the speaker called attention to the fact that structure modernization will not, by itself, solve all the problems of profitability--contrary to what many people believe. The transformation of production structure is not a short-term task but will take several years and is a long-term commitment. In the new circumstances, after 1980 the companies will not look for the momentary profit potential (as they do now). They will strive for more effective processing of products to increase the added value in terms of better prices on the world market.

This ended Monday's discussion; on Tuesday the participants will continue to work in sections.

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BURGERT DESCRIBES TECHNIQUES, EXPECTS PROSPERITY

Budapest NEPSZABADSAG in Hungarian 16 Sep 79 p 5

[Interview with Robert Burgert, president of the Babolna Combine, name of interviewer, place and date not given]

[Text] Babolna is 190 years old this year. However, an agricultural combine cannot live on the results of the past--or even on last year's results. Babolna is well-known at home and abroad not because it has existed for almost 2 centuries but also for its ability to renew. The changes occurring in the world economy now and in recent years pose even-higher demands to the producers. What is happening at Babolna? Will this, the country's largest agricultural combine continue to produce economically, produce much, spur others with its deeds and help to the successful resolution of the increasing tasks? These concerns were in the center of our conversation between our writer and Robert Burgert, member of our party's Central Committee, and president of the Babolna Agriculture Combine.

[Question] As the tools, machines, materials, and energy needed for production continues to increase in price, what do you regard as the important issue in your combine?

[Answer] The most important issue is the ability to develop and expand, in the true sense of the word, for more effective production. Don't misunderstand: the formation of production structure, the good use of working time and thrift are all elements of management that have been and will stay fundamental for years. These had been understood for some time because the increasing difficulties of production have been evident. The places where this had not been understood are already in trouble.

[Question] To what extent do the burdens of work increase?

[Answer] I do not want to talk about ever-increasing costs. Anyone who knows that we consume 38 million kWh of electricity every year in our combine knows this. This is the same amount that a large machine company uses. Babolna also uses 24,000 tons of diesel fuel and gasoline. Year after year, a great deal of protein feed and fertilizer are used. Naturally, all these have to be handled with thrift. But thrift alone cannot balance the price increases.

[Question] A good word is nice but even the smallest deed is better on a farm. What are the deeds at Babolna?

[Answer] Toward the end of last year we examined how we could pay our men at least as much in 1979 as we paid in 1978. We found that at least two acts were needed: Production--along with profit increase--had to reach 4 billion forints and 220 people would have to be laid off.

[Question] Aren't these conditions too harsh?

[Answer] That last one is a hard thing to do. Last year, one worker here produced 800,000 forints. It has been a long time since we have added to our payroll. Now we have to shrink it. It was very strange to lay people off. The hardest was the fact that a man should say goodby to another man--and not as a manager to an employee. The latter is simpler but, in the case of decent working people, the matter is more than that. Of course, every one found a job. Still, this was a hard task and the conditions for it had to be created inside the combine.

[Question] How did you do this?

[Answer] I will mention only one area: poultry. According to our definition, this process has been industrialized. This means that instead of the old managers, foremen, and various animal experts, we entrusted the unit to the machinists.

The main reason for this unusual step was the failure of service to the poultry unit. Lately, mechanical failure has increased in the poultry units. The number of service employees has been growing and yet, at times, 40 percent of the ventilators were down in the buildings.

When the machinists took over we could lower the number of workers in the service to one-quarter of its former strength yet the machines are running and production improved. It is proven now: when a production is highly mechanized, the machanic is the key person. Of course, this is easier to recognize than to act on. We, too, could have moved earlier on it, before we were forced to do so by circumstances.

[Question] This had a favorable effect on the productivity. How does productivity rank at Babolna?

[Answer] Productivity and effectiveness can increase here, as elsewhere, through better activity at the various units. There is no sense in speaking of it in generalities, only on the level of smaller production units. From feed to animal health, to fertilizer economy, to work productivity increase, very many factors influence the effectivity of production. We consistently attempt to use our tools, energy, and the creative strength of man in the most rational manner.

How successful are we in this? Company profit is one index: in 1976, with 2.6 billion gross income, we had 182 million forints in profit. Last year with 3.7 billion in production value, we profited 322 million. Of course, this was a product of the domestic price situation. However, as regards production development, we think it is more important to increase competitiveness, stemming from our own strength, on the international market.

[Question] Babolna has export-import privileges. How does foreign trade affect the farm?

[Answer] It adds to the demands. It is well known that competition is very sharp in international trade. Quality demands are especially strong. We are greatly affected by this situation. We export an important part of our production. This year, we will spend nearly $30 million and 21 million rubles in exports. Our poultry unit exports more than 120 million fertile eggs, 30 million chicks, and several hundred thousand pullets and hybrid parent pairs.

[Question] Speaking of exports, how do you do with Soviet shipments?

[Answer] The first freight cars left in June. We and 38 other Hungarian companies participate in the construction and equipping of four units that will produce Tetra broiler meat in the USSR, using the Babolna method. To be exact, we build two breeding centers and two broiler factories, each having a capacity of 20 million every year. To be ready on time, 24 units and equipment have to be sent every month--520 freight cars, in total. We are a month ahead now. If needed, we can undertake an even quicker pace.

[Question] What do you do to forge ahead and avoid falling behind on international markets?

[Answer] New initiatives are needed to keep our place at home and abroad. The bigger the pressure, the more need there is at our company for renewal and new solutions, for which we have two sources at our combine: the people, the preparation of the more than 4,000 workers for the start of every new work process and the other is the continuous improvement of technology.

[Question] Let us first talk about the men.

[Answer] It is very important (because it determines the mood in a community) to provide the workers with a prospect. They should feel and know that what they do will form and affect their lives directly as well as indirectly. If this is inculcated, the company has a prospect of success also.

Up to now, when we have talked about results, we have only spoken of the collective. It follows that we also made the faults collective. Now we need to personalize the results and the faults. In evaluating the faults and recognizing the achievements, we regard the judgment of the community to be very important. This is why we move that the socialist brigade should decide whether someone excels at work.

[Question] For years, at the edge of the huge cornfields at Babolna one could see signs giving two names among the area and agricultural data. Why do you put these names on the signs?

[Answer] These are the names of the people who work that field, from preparation and sowing, to the end of harvesting. This is one way to personalize work and form the view and attitude of ownership. General statements and cliches lead nowhere in this area. Now, people look at their cornfields on holidays and Sundays. They show their corn and work with pride to their relatives and friends.

We urge good work in managers and employees by the consistent evaluation of exactly defined tasks. This includes paying bonuses. We cannot yet use wages for this purpose--but bonuses and rewards help us to differentiate the achievements. With corn, the most important procedure is sowing. Every year, we have a competition for the master of this procedure. This year the Bela Bodnar-Janos Czefernak pair won the title. We also have a point-based competition system. The company management evaluates the units, the managers evaluate the brigades, and the brigades evaluate the individuals. We have taken many similar steps--some of them had little success--toward the goal that a man should work every day with the proper preparation, willingness, and desire to create.

[Question] What does Babolna do for the improvement of the second condition: the development of production technology?

[Answer] Looking at the economic changes of the past few years, one can see that demand grew faster than we did. In this sense we have now, like many others, fallen behind. We must fight this. Production development can help here, too. Here, we have three technologies in every area of production. The first is the existing one, the second is what is being tested, and the third is experimental. Many things fail, of course, in the experiments. However, the good ideas and elements survive into testing and from there they are built into the technology.

[Question] How does this affect the main area of the combine--the poultry unit?

[Answer] We are facing great changes. In April or May we will offer new broiler hybrids to our partners and customers. Our experiments show that these hybrids improve almost every parameter of chicken production. We will thus supply material to our partners that makes production more profitable.

[Question] What are the characteristics of the new, hybrid chickens?

[Answer] We want to change the international practice to become more competitive on foreign markets. At present, the chicken reaches 1,300-1,400 grams by the time it is 7 weeks old. The new Tetra 726 broiler can be used three ways, depending on the market's needs: the so-called grill chicken will be 150-200 grams heavier in the same time lapse on 15 percent less feed and will have lower death losses. Should the market want lower weights, the Tetra 726 can be fattened for a shorter period of time to 800 grams dead weight for a traditional fried chicken quality; saving some feed and using the capacity better. We are now also developing another variety, tasting like a more mature, household chicken. It reaches 2.5-3 kilograms live weight by the 15th to 16th week. We are also working on a more cost-effective technology.

[Question] Do you plan important innovations in hog raising?

[Answer] Yes, we do. Our Tetra hybrid piglets, raised here, command a 10-12 percent premium in several Western European countries over other excellent breeds. In the FRG, the state recognizes Tetra as the No. 1 hybrid hog. We can't, however, stand still with the breeding.

The SPF hog-raising system has been well-known for years around the world. Its essence is the protection of the piglets from microbes. In the first step, the piglets are born by Cesarean section. They are then raised aseptically in incubators. In exchange, we get incredibly high feedstuff utilization and fast development. In addition, medication expenses drop to one-quarter of the earlier level. Piglets raised this way are excellent breeder material--if they don't get infected. Their offspring give the same excellent meat as the first, Cesarean generation.

[Question] As far as I know, nowhere in the world could this be pursued on a large scale.

[Answer] Our joint company in the FRG, the Protinas, has just completed the practical method, with the help of our experts. With the help of the Ministry of Agriculture and Food Industry, and the National Technical Development Committee, we are now building a large-scale SPF facility.

[Question] Isn't the risk too great? This is surely a costly facility in today's world which is so conscious of the value of money.

[Answer] There is no progress and success without intelligent risk-taking. The fact is that the method is feasible and promises to be economical. As for thrift, it is imperative to economize in all areas, all the time, even in SPF raising.

[Question] The Babolna Days will again take place early in October. What is their purpose?

[Answer] On the Babolna Days, we open the farm to anyone. This year we will let 60 domestic and 50 foreign firms show and operate their best, most modern machines and tools. This is not a celebration because we exhibit our largest harvesting and winter preparation processes.

[Question] Why is this mass movement good for Babolna?

[Answer] This is when we satisfy much of the interest in our processes, expressed to us all year round. It is perhaps more important that this event keeps us under the pressure of criticism. We can't be satisfied with the control of the regulatory bodies and inspectors: we have to create our own control. Experience shows that the eyes and words of hundreds and thousands of experts is an inspection. We can't buy it for any amount of money.

[Question] Probably the visitors have other reasons for coming.

[Answer] We also want to awaken thoughts and transmit our experience, i.e., few places--even outside the country's borders--show corn experiments where almost 400 varieties can be seen side-by-side.

[Question] What innovations do you show in corn?

[Answer] Most of our corn-growing machinery is at the end of the amortization cycle. Fortunately, Raba, at Gyor, has already started to produce machines and tools that are of the same level. Most of the improved machines will be replaced by Raba's. We also pay a lot of attention to seed production and to a less expensive way to increase the soil's strength. Based on the soil, we propose different production technologies. One approach is to have less production expense and lower yields on the poorer soils. Another approach is to outpace increasing costs by a faster yield increase.

Naturally, we can't exclude ourselves from the progress of the world. We plan a corn program where American firms would participate and receive a part of the increased yield. We want to produce 7,000-9,000 kilograms/hectare on large areas safely and economically.

[Question] One can often hear at the farms: one can barely progress--if at all--under the changed, more difficult conditions.

[Answer] It is possible to progress but it is harder. One has to have even more ideas, innovations, and initiative than before. Of course, everything has to stay on the ground of reality. Part of the reality is that there are no two identical factories and the farms can't follow fads. Each has to progress by its own circumstances. Even the smallest viable idea has to rank with us.

It is not certain that others can't make money the same way we do. Each has to develop the most successful plans and actions around his own house. It is important and necessary that they should be real. We can help one another mostly with the quick transmission of ideas and an intelligent, active view. This is, at the same time, our duty.

10101
CSO: 2500

WARSKI SHIPYARD FOREIGN ORDERS NOTED

Ship Launchings

Szczecin KURIER SZCZECINSKI in Polish 7-9 Sep 79 p 1

[Text] Two new ships will be launched today at the "A. Warski" Szczecin Shipyard. At 1300 hours, at the "Odra" slipway, the M/S "Al Yarmouk" will slide into the water while at 1600 hours, a the "Wulkan" slipway, the M/S "Sapele" will be launched. Both ships are destined for foreign shipowners. The launchings are open to the public.

Passenger-Vehicle Ferries

Szczecin KURIER SZCZECINSKI in Polish 11 Sep 79 pp 4-5

[Text] The "A. Warski" Szczecin Shipyard is the only shipyard in Poland which specializes in the building of ferry vessels. Two of them, the "Pomerania" and the "Silesia" have already enhanced the level of the Polish Baltic Shipping Company. Currently, two passenger-vehicle ferries for a Soviet shipowner are being built on the shipyard's slipways. One of these vessels is one of the already popular "Olympian" [series] which will begin service on the Tallinn-Helsinki Line during the upcoming Olympics.

CSO: 2600

BRIEFS

BIALA PODLASKA AVIATION WORKS--More and more often there is talk of locating a sport aircraft repair works in Biala Podlaska. These considerations are not unwarranted since during the interwar period there was an aircraft factory there. THE PWS-1 two-seat, fighter escort was the first aircraft built in Biala Podlaska. Admittedly this monoplane and its later version were not among the most successful aircraft but, shortly thereafter sucessive designs were made of aircraft with diverse roles. Preparations for the start of production on a broader scale were interrupted in 1939 by the outbreak of World War II. After the liberation, many of the former aircraft plant's workers began working in the Water and Land Reclamation Equipment Repair Plant in Biala Podlaska. [Text] [Gdansj GLOS WYBRZEZA in Polish 24 Sep 79 p 4]

CSO: 2600

PROSPECTS FOR DEVELOPMENT OF ENERGY RESOURCES

Bucharest ERA SOCIALISTA in Romanian No 18, 20 Sep 79 pp 15-18

/Article by Vasile Nitu, technical director at the Institute of Power Studies and Design/

/Text/ Energy, a subject of debate among specialists up until the first decades of the 1900's, in recent years has become a basic problem which is a condition for the very development of modern society. We are seeing a broad process whereby the masses are being made aware of the role energy plays in society and the need for adopting a responsible attitude toward the present and, in particular, the future of energy for mankind.

Energy problems are being approached more and more insistently by national and international organs. Prestigious organizations as the United Nations and CEMA have compiled studies and organized discussions on energy themes with the participation of specialists from all areas of activity. More and more governments are working out programs to solve energy problems. Scientists and inventors, stimulated by the evolution of events, have intensified their efforts toward increasing the productivity of existing technologies, toward achieving new conversion technologies using fission and nuclear fusion, magnetohydrodynamic cycles, combustion cells as well as toward working out solutions for the utilization of solar, geothermal and wind energy and so forth.

In Romania the draft documents of the 12th party congress, among which are the draft program-directive for research and development in the energy area for the 1981-1990 period and t[illegible] orientations up until 2000, are a proof of the boldness, clearsightedn[illegible]cientific concept of our party in the energy field. The major goal of t[illegible] program--that Romania become independent in the next decade from the viewpoint of fuel and energy--involves great material, financial and human efforts and in the end requires a broad mobilization of all our people's creative resources.

What must be brought out is the fact that Romania has conducted an energy policy of anticipation, through orientations and practical measures, getting

ahead of the events which occurred on the world fuel market in 1973-1974 and later. These orientations have brought basic changes to energy management and certain improvements in the structure of the energy balance, in the organization of research devoted to drawing new energy resources and in raising the productivity of equipment and consumption apparatuses and so forth. Added to this are important organizational measures, among which are the presidential decree's establishment of the council for coordination of the development of the energy base and operation of the national energy system.

Despite its insufficiencies, the experience accumulated is a guarantee that the programs which will be subject to approval by the 12th party congress will be carried out unconditionally. Romanian energetics will develop in the future not by extrapolating past trends but, rather, by achieving new technologies which will diversify and change the structure, of course, for the better and with maximum efficiency.

Saving Energy is Obligatory in All Areas

In the last 6 years, the international energy crisis has become accentuated and the conditions for coming out of the crisis have become reduced, among other reasons, as a result of the appearance of the financial crisis seconded by the crisis of raw materials and so forth. In this situation, the measures taken at the world level and, in particular, in the industrialized countries aim in two directions: first, reducing energy consumption to the lowest levels and, second, finding solutions to assure the need for energy by replacing natural oil with synthetic oil, readmitting coal to the forefront, utilizing nuclear power on the broadest possible scale as well as new sources such as solar, wind and geothermal energy, biogas, biomass and so forth. In many countries we note new orientations in the use of energy resources, a restructuring of industries, a renunciation or restriction of the manufacturing of big energy-consuming products, restrictions on the consumption of hydrocarbons, improvement in equipment productivity and so forth. The seven big capitalist industrialized states (the United States, Canada, Japan, England, France, FRG and Italy), which consume 70 percent of the world's oil production, at the high-level Tokyo meeting decided to reduce oil consumption and speed up the utilization of other energy sources which would contribute to reducing the dependence on the oil-exporting countries. The Common Market countries decided to retain oil imports for the 1980-1985 period at a level which would not exceed that of 1978.

The dizzy rise in crude oil prices has repercussions not only on limitations on the imports by the big consumer countries but also on the rise in the price of oil products and, thus, the possibilities of the poorly developed countries to buy. At the same time, a rise in the price of products which use energy resources in the manufacturing process is taking place as well as an increase in transportation costs and so forth.

These effects are becoming generalized, including both in the industrialized states and, in particular, in the developing states, which are being forced to import oil and do not have enough free currency available.

The effects of the world energy situation also are being felt here in Romania both as a result of the interdependence of Romania's economy with the world economy as well as due to the fact that energy needs, particularly in the area of hydrocarbons, can only be satisfied partially by domestic reserves. (At the 1978 level around 46 percent of oil consumption was being covered by imports.) These are reflected in the recent measures to increase the prices of fuel, electrical energy and natural gases, with the establishment of an agreement between actual costs and sale price to follow.

The policy of utilizing energy resources in Romania aims at assuring the energy base necessary for development of the national economy at high rates. Rational utilization of the various energy resources has taken many forms due to the fact that we have available varied energy resources but ones which are limited in quantity--coal, crude oil, natural gases, bituminous shale, hydroenergy and nuclear resources as well as resources being researched--with a view to their utilization in the future (solar, wind energy, biogas, geothermal energy, gently sloping waters and so forth).

The evolution of production of the main energy-carriers in the 1950-1978 period was as follows:

	Unit of measurement	1950	1960	1970	1975	1978
Coal -net	million tons	3.2	6.8	20.5	27.1	29.3
Crude oil extract	million tons	5.0	11.5	13.4	14.6	13.7
Methane gas	billion cub.meters	2.1	6.7	20.0	27.0	29.0
Hydroelectric power	TWh	.17	.4	2.8	8.7	10.6

We see that coal production between 1950-1978 rose around 9 times, crude oil- around 2.7 times, methane gas--around 13.8 times, while the production of hydroelectric power rose more than 62 times. Whereas at the 1977 level around 76 percent of domestic energy consumption was represented by consumption of hydrocarbons and around 18 percent was coal consumption, for the future we are expecting that the changes in the structure of Romania's energy balance, in conformity with the program in the energy area, will continue, with regard to increasing the share of coal, the appearance of nuclear-electric energy and the rapid growth in its share in Romania's energy consumption and attraction of new sources into the energy balance and corresponding reduction in hydrocarbon consumption, predominantly crude oil consumption. In the 1980-1990 decade, big changes are forecast in the structure of the energy balance, as we see in the table below:

	1980	1985	1990
Production of electric power (in %)	100	100	100
Hydroelectric	17.6	20	24
Nuclear-electric	---	---	17-18
Coals and combustible shale	40.0	55	44
Hydrocarbons	39.7	20	5-6
Solar energy, other new energy sources and energy resources recovered	2.7	5	10

The changes forecast in the structure of the energy balance raise qualitatively new problems for whose solution we need much professional competence, a spirit of selflessness and understanding of the rationale behind the major goals which the party is placing before the specialists.

Through the rates and proportions established for economic growth, the future five-year plan seeks as a goal of primary importance the modernization of economic structure, a change in the share of various branches and products in the national economy, which will have a positive effect on superior utilization of energy resources, continually more accentuated saving of energy and fuels, reduction in the average annual growth rates of consumption of primary energy and electric power in proportion to the rising curve of the other branches of the national economy. The task mentioned in the program-directive that a minimum 40-percent reduction be assured in the average indicator of energy consumption per 1,000 lei industrial production for the entire 1981-1990 decade and a reduction of at least 2.6 times compared with 1980 by the year 2000 requires an accentuating of concern with saving fuel and energy through changes in the structure of industrial production, periodically seeking a rise in the consumption indicators, compilation of energy balances, modernization of energy-producing,-transforming or -consuming installations and so forth.

It should be pointed out that energy indicators are specific to each national economy and reflect the particular climate conditions, economic structure, historical stage, way of life, with no standard model existing in this regard; but what should characterize any economy is a diminishing curve of specific consumption and a rise in its contribution to forming the national income. Under the conditions of the rise in the cost of primary energy and of electric power as well as of reduced fuel reserves, a firm orientation is needed toward the types of development which involve more reduced energy consumption.

Of course, in such a troubled situation as the one which today characterizes the foreseeable development of energy, whether economically or with regard to the technical possibilities, the energy-carriers of the future have not been established yet. Undoubtedly, science and technology will find solutions, but the point when the new technologies will become competitive cannot be specified. Under these circumstances there has been broad acceptance of the idea that the most available and most economical source of energy is energy economy. From this source, all the states, including the industrialized states, expect to cover about 20-25 percent of the need for energy.

Romania's experience has shown that reductions can be obtained for each category of energy-consumer, with the results until now being merely a start. "Although we have achieved certain good things," Comrade Nicolae Ceausescu stressed at the working meeting of the RCP Central Committee in September, "we continue to need decisive measures for reducing material consumption, particularly of energy and oil."

In industry the greatest energy-consumer (around 70 percent of the total) and the most efficient method of identifying the possibilities for saving and rationalizing energy in the production processes has been and remains the drawing up of energy balances, which is a quantitative and qualitative synthesis of the technical and economic characteristics of the installations for the production, transport, transformation and utilization of energy. In light of the experience accumulated and taking into account the fact that in working out the energy balances not all the industrial units have benefitted from specialized and organized technical assistance, I feel that, in light of the program-directive, it would be opportune to organize units specialized in the problems of industrial and communal energy which would offer competent assistance from the conception phase up to actual implementation of some strictly specialized projects.

Another important action is the adoption of technologies and technological equippment with high productivity and the modernization of existing ones. Here it is necessary to stress that the productivity of one aggregate, determined for operation under nominal conditions, does not fully express energy consumption, since under real conditions the aggregates operate with partial loads or empty. Optimization of the loading of the energy equipment depending on the criterion of minimizing fuel and energy consumption may bring large energy savings and from here we have large reductions in production costs. The very state of the technological or energy aggregates affects specific energy consumption. An aggregate characterized by superior safety leads to lower energy consumption and production costs. For this reason the relationship of "assured operation-energy consumption" deserves more careful analysis by the specialists as well as by the leaders of the economic units so that efficient measures are adopted for optimization of it.

The favorable effects of improving insulation in social and industrial buildings and technological installations on energy consumption are well-known. Unfortunately, the problem is not being treated with enough attention everywhere. Whereas the insulation of technological installations or transportation lines is concerning the specialists and is being reflected in the energy balances, the aspects regarding heat insulation for housing constructions, social-cultural buildings and industrial halls which need to be heated and so forth are not being treated in the same way. Here we have the need to review the regulations for insulation through the introduction of limits for heat loss and to work out solutions and produce adequate insulating materials so that the specialized organizations or even the tenants can apply them easily.

In the chemical, metallurgical and other industrial branches with energy-intensive processes, a main way for saving energy is recovery, heat recovery in particular. In 1978 the energy resources recovered in Romania's chemical industry assured about 17 percent of the need for thermal energy and fuels utilized for energy purposes. It is evaluated that there still are many ways of reducing energy consumption in these branches. The identification of all reserves and adoption of specific measures for maximum utilization of them are a task of the foremost urgency.

Modern agriculture has become a large energy-consumer both through direct consumption (due particularly to extending of mechanization, irrigation and organization of hothouses) as well as indirectly (utilization of fertilizers, herbicides, pesticides and so forth). It is felt that the largest savings can be obtained by adopting sensible solutions for irrigation through utilization of solar energy, geothermal energy and residual waters with higher thermal potential to the greatest possible extent.

With regard to household energy consumption, although this represents a relatively small percentage of general consumption, energy savings also can be obtained here through good organization and optimization.

Under the conditions of a critical balance which requires energy to be imported, the reexporting of energy through products where they are incorporated must be the subject of serious economic analysis in order to establish the advisability of exporting each product separately.

An Indispensible Requirement: The Discovery and Utilization of New Resources

The program-directive for research and development in the energy area sets down important tasks for the very branch of electric and thermal energy regarding the efficient utilization of energy resources and economizing on fuels and energy. In this regard the total use of the hydroenergy potential which Romania has available by the year 2000, the combined production of thermal and electric power through development of industrial and urban district heating which must lead to savings of around 3 million tons of conventional fuel per year by the end of the 1981-1985 five-year plan and the obtaining of special fuel consumption as low as possible in the production of electric power and heat and so forth are of primary importance.

The total approach to energetics in a systematic concept, as provided by the program-directive, under Romania's special conditions,has led to the conclusion that total energy consumption in the coming decades can only be able to grow as new sources of energy are identified and technological measures are applied for economical utilization of them. Implementation of this goal of great national interest involves a close and permanent collaboration between economists and energy workers so that for the economy as a whole the optimum structure is found for the energy balance as well as solutions for raising efficiency in the production and consumption of energy.

Programs for energy development reflect processes which evolve with time, while economic comparison of them poses complex problems. Besides the aspects connected with tie-ups of capital and resources which appear during the execution of any investment, the technical concept and solutions are affected by technical progress as a result of the discovery of new technologies, moral usage of existing technologies and so forth. In this regard the economists have a great say in the matter. That is why the program-directive for scientific research, technological development and the introduction of technical progress in the 1981-1990 period and the main directions until the year 2000 provide that "economic research should make a higher contribution

to the analysis and foreseeing of new directions for society's development in relationship to the changes which occur in the area of production forces, science and technology."

Of course, there are many complex criteria for judgment regarding development in the energy field, too, and they vary with time. The concept of some calculations with static economic volumes is being exceeded by the evolution of events on the fuels market and should be replaced with a dynamic concept where the economic volumes should be used absolutely taking into account the overall trends of evolution of the restrictions which may occur.

The need for increasing the share of new technologies in the energy field requires a broad development of technological research. The economic calculations thus must be conceived of and directed so that they stimulate the technological research intended to attract new energy resources, build installations with high productivity and so forth. With regard to the economic levers, they should continually stimulate the adoption of solutions which utilize energy at a high level and contribute to increasing productivity and to reducing losses.

The diversity of fuels and the demands of the consumers in the supply with energy and fuel, of course, require well-founded solutions through the study of a large volume of information using electronic computers.

Optimum Results Through Combining Technical and Economic Elements

Nuclear energy and coal will have the greatest share in the future energy balance of Romania, with inexhaustible resources such as solar energy, wind energy, geothermal energy to represent 10 percent in the future.

The program for construction of nuclearelectric power centrals in Romania provides for achieving an installed electric power of 660 MWe in 1985, 3,960 MWe in 1990 and around 10,000 MWe in the year 2000. With regard to the nonconventional resources we have available, the new energy technologies being affirmed will allow new forms of energy to be drawn into the energy balance which come from utilization of solar, wind, geothermal energy, wave energy and energy coming from the biological transformation of carbon dioxide and biomass. Experience until now in utilizing nonconventional energy resources leads to the conclusion that these forms of energy can be used in all areas of activity. The dimension of these energies exceeds Romania's hydroenergy potential, which once again shows the need for their being drawn into economic circulation faster.

The promotion of new resources, of course, requires a multilateral approach to the entire problem raised by the design and building of classic installations with regard to assured operation, effects on the environment, productivity and so forth. New technologies potentially contain many risk elements which may evolve, becoming transformed into lengthy lacks of availabilities.

These risk elements may be reduced considerably if the stages which the classic installations have confirmed proceed, synthesized scientifically in the new disciplines regarding the assured operation of energy installations.

On the other hand, it is known that the new energy sources are characterized by lack of regularity (for example, there is sun in the summer and less in the winter), which requires the use of these sources for integration of the installations in local microsystems and taking over the lack of regularity of their operation through stocking of energy in the most varied forms: heat, electric power, mechanical energy and so forth. The program-directive's provision to work out energy plans by locations and by counties, whose priority goal must be to cover the needs from their own resources and the possibilities through maximum mobilization, particularly of new energy sources, will contribute to achieving a unified energy concept territorially and to faster integration of local resources in the national energy circuit.

The future structure of energy installations requires an incomparably larger diversity of specialties than currently and a much more profound approach to the energy problems. In this context, the specialists' training must be ahead of the implementation of these installations considerably and all types of education, particularly higher education, is to adapt to the new requirements. The specialists, with well-based energy culture but also with deep technological knowledge according to the area they will work in, must correspond to the diversities of energy technologies which will be utilized in the future.

Energy problems in the current stage, as emphasized in the program-directive, require a unified approach in a single concept, a coordination of the action of ministries and departments whose tasks are in the energy area. For that reason the organization of working out studies which would substantiate the decisions on orientations in the utilization of energy resources, prognosis of the energy need and so forth should enter into the task of one specialized institute which would work in collaboration with the departmental institutes.

Along the same line of idea, in my opinion, it would be useful to organize a National Energy Dispatcher supplied with computers and specialized personnel, which would do the computing and actually head the distribution of fuels and the use of reserves from the stocks, including the imported fuels, and would achieve current optimization of the energy flows and reserves in the fuel storages and so forth. This dispatcher would have to have effective ties with the ministries' dispatchers, including the dispatche. of the national electric power system under the Ministry of Electric Power. Economical distribution of fuels and avoidance of crossed flows, as has been shown by calculations until now, can lead to large savings of fuel.

Working out an energy strategy which would permit Romania to reach the efficiency indicators achieved in the industrially developed countries and a superior utilization of energy resources in a relatively short period of time continues to require broad interdisciplinary research aimed at improving

the technological process, increasing the productivity of installations and consuming apparatuses and improving the insulation of social and industrial construction and by the end working out what I would call a new philosophy of energy use. The bases of this philosophy, with broad repercussions in social-economic practice, we find brilliantly formulated in the draft documents of the 12th party congress. A deep study of them and implementation of the provisions they contain will mark new and important progress in Romania's development and the rise in the Romanian people's standard of living.

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ADDITIONAL DATA GIVEN ON FEDERAL BUDGET FOR 1980

Deficit To Continue

Belgrade EKONOMSKA POLITIKA in Serbo-Croatian 8 Oct 79 p 29

[Excerpt] According to the basic draft of the 1980 federal budget, budgetary funds are to increase by 30.8 percent over 1979 and will amount to 130 billion dinars. Most (80 percent) of the budget will be used to meet the legal obligations for financing the Yugoslav People's Army and the social sectors of the undeveloped republics and the Province of Kosovo. These obligations are established on the basis of 0.8 percent of the social product being allocated for the undeveloped areas and 6.1 percent of the nominal national income being allocated to the Army. Expenditures for the Yugoslav People's Army will increase by 44 percent and those for the undeveloped areas will increase by 44.7 percent compared to 1979. Expenditures for pensions and veterans' disability payments will increase by 27.5 percent, to compensate for the increased cost of living (and the larger number of pensioners). Of the remaining budgetary outlays, investments in non-economic sectors will increase 20.6 percent. These will be used by the federal secretariats for foreign affairs and for internal affairs and will also be invested in modernizing air transportation. The increased budgetary outlays will not be covered, on the whole, by corresponding revenues, the budget deficit will continue and will increase by about 49 million dinars over 1979, amounting to 8.5 billion dinars. This amount will be covered by National Bank credits.

Budgetary revenue from customs fees and tariffs is expected to be 21.9 percent higher, amounting to 26.6 billion dinars. More than one-half of the [total] amount collected from customs tariffs and fees, namely, 28.3 billion dinars, will be channeled to the Yugoslav Interest Community for Promoting Economic Cooperation With Foreign Countries, will not be included in the budget, and will be used to stimulate exports. Planned revenues based on customs duties are attainable only by assuming a 7-percent increase in imports (at current prices) and also by reducing the import of goods on which duties are not paid (food products). Revenues based on the basic sales tax will be shared equally between the federation (50 percent) and the republics and provinces (50 percent). Higher revenue can be provided by higher retail trade and by changing the rates of the sales tax. Of

the total planned budgetary revenues amounting to 130 billion dinars, republics and provinces will contribute 40.5 billion dinars, representing a 42.5 percent increase over 1979. Their obligations are based on their individual share in the country's social product. Only Kosovo will be exempt from paying 80 percent of its contributions; this obligation will be assumed by the other republics and the Province of Vojvodina.

The suggested budget has not included the obligations of the Federation which have not been met from previous years; if these were included, the budget would amount to 151 million dinars.

Allocations, Republic Contributions

Belgrade PRIVREDNI PREGLED in Serbo-Croatian 5 Oct 79 p 4

[Excerpt] Most of the 1980 budget funds (6.17 percent of the national income) will be used to finance national defense. For disability-veterans payments 18 billion dinars is planned, for military insurance pensions 6.2 billion dinars, and for additional funds for underdeveloped republics and Kosovo 12.6 billion dinars. For federal organs and organizations 8.2 billion dinars will be spent from the budget.

Budget expenditures will be largely met from sales taxes, customs duties, fees, and administrative revenues; these sources will provide 80.9 billion dinars. Contributions to the budget from republics and provinces is to amount to 40.5 billion dinars, while credits from the National Bank will amount to 8.5 billion dinars. If the republics and provinces accept this draft budget for next year, their contribution would be 42 percent more than it was in 1979, with their share as follows: Bosnia-Hercegovina 5.2 billion, Montenegro 720 million, Croatia 10.9 billion, Macedonia 2.3 billion, Slovania 6.8 billion, Serbia 9.9 billion, Kosovo 152 millllion, and Vojvodina 4.4 billion dinars.

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UPDATE ON ENERGY NEEDS, SHORTAGES GIVEN

Belgrade PRIVREDNI PREGLED in Serbo-Croatian 3 Oct 79 p 11

[Excerpt] There will be a shortage of 1.6 million tons of liquid fuels to meet domestic market and other needs up to the end of this year. According to the energy balance sheet, this pertains to 640,000 tons of crude oil and to 1 million tons of derivatives which will not be imported. In regard to crude oil and derivatives, obligations to the DINA petrochemical combine on Krk, amounting to 200,000 tons, have not been met. The Yugoslav market will also be faced with a shortage of motor oil, lubricants, and anti-freeze. This was brought out at the 1 October meeting of the council for developing work and operation in the General Association of Organizations of the Yugoslav Oil Economy, held in Rijeka. For objective reasons it will not be possible to import 1.6 million tons of oil by the end of the year. As a result, it was suggested that 857,000 tons of oil derivatives or crude oil be imported. The lag in filling in reserves and the delivery obligations to DINA will be made up by including these in the account for 1980.

A shortage of producer goods will result in the lack [mentioned above] of motor oils, lubricants, and anti-freeze. Producers had funds to import these producer goods only to the middle of this month. The lack of lubricants and other products is expected to impose great damage on industry, transportation, construction, the electric power industry, and agriculture. It is at present uncertain whether a solution will be found. Producers said that one way out would be to seek emergency persmission for the free formation of prices for these products. Also, it was said that 500,000 tons of crude oil will be lacking, initially, to fill the Yugoslav oil line; this was not foreseen in the balance sheet.

Draft plans, examined at the meeting, for processing crude oil in 1980 proposed that refineries process 18.5 million tons of crude oil next year. There are no large discrepancies between market needs and the production plan, except for mazut, for which there would be a shortage of 1.6 million tons. The question of liquid gas and the needs of the Pancevo refinery for 600,000 tons of gasoline remain unresolved. In addition, INA (Petroleum Industry of Zagreb) seeks for its own needs the import of 2 million tons of oil which would be covered by exporting oil derivatives and would not burden the foreign exchange balance of the country.

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BRIEFS

SEPTEMBER PRICE RISE--Retail prices increased 21.2 percent in the first 9 months of this year over the same 1978 period. Prices for industrial products rose 22.2 percent; prices for these products (excluding food products) increased 24.7 percent. The price of services rose 20.8 percent in this 9-month period. Retail prices rose 25.2 percent in September compared to September 1978, while the prices of services increased 25.5 percent. The cost of living increased 19.9 percent in the 9-month period, with transportation and postal, telephone, telegraph services increasing most, namely, 33 percent over the same 1978 period. Housing costs rose 18.6 percent in the 9-month period, while heating and lighting costs increased 25 percent and the cost of household furnishings rose 21.3 percent. Food costs increased 17.8 percent and the cost of shoes and clothing 20.1 percent, over the 9-month period last year. [Text] [Belgrade PRIVREDNI PREGLED in Serbo-Croatian 10 Oct 79 p 11]

PRODUCER PRICES--In the first 9 months of this year producer prices rose 12.6 percent over the same 1978 period. Prices for producer goods rose 15.2 percent, those for consumer goods 10.5 percent, and those for machinery and equipment 6.6 percent. Producer prices for industrial goods increased 15.7 percent in September over September 1978. As in previous months, the highest increase was for prices of producer goods; in September this increase was 19.6 percent. Also in September prices for consumer goods increased 12.5 percent; prices in oil derivative production increased 76 percent, those in oil and natural gas production increased 30.8 percent, in animal feed production 9.8 percent, rubber processing 9.4 percent, lumber and board production 8.6 percent, machinebuilding 7.2 percent, and in coal processing 9 percent, compared to September 1978. [Text] [Belgrade PRIVREDNI PREGLED in Serbo-Croatian 10 Oct 79 p 11]

COAL PRICE INCREASE REQUEST--At the beginning of September the executive council of Slovenia accepted a request from coal mines in this republic to increase coal prices 20 percent. This decision was in agreement with [similar decisions of] the other republics and provinces. If federal organs responsible for prices accept this increase request, coal prices here could be increased before mid-October. [Excerpt] [Belgrade PRIVREDNI PREGLED in Serbo-Croatian 4 Oct 79 p 2]

GAS PRICE REQUEST--The executive council of Vojvodina has accepted a recent request from the Naftagas enterprise in Novi Sad to increase prices of natural gas from domestic production 61.5 percent. This request has been forwarded to the federal organs responsible for this. Such a high increase is based on the fact that domestic natural gas prices have not been increased since 1976. According to calculations submitted, if the price of domestic natural gas were on a level with that of imported gas, the increase would be 112 percent. [Excerpt] [Belgrade PRIVREDNI PREGLED in Serbo-Croatian 4 Oct 79 p 2]

TRADE WITH IRAQ--In the last several years Iraq has become one of Yugoslavia's most important foreign economic partners. In the first 8 months of this year exports to this country increased by 65 percent, exceeding all expectations. In this period $153 million worth of goods were exported and $498 million imported. Thus, the Yugoslav deficit in trade with this country was reduced by about $50 million compared to the same 1978 period. The Federal Secretariat for Foreign Trade estimates that about $800 million worth of projects are in progress (including construction of a dam and delivery and assembling of equipment for the Hemrin Hydroelectric powerplant valued at $182 million, construction of the 105-kilometer-long Bagdad-Hila highway, development of the Dudjeila agroindustrial complex valued at $343 million, and construction of a power line and delivery of transformers valued at $35 million). Regular Yugoslav exports to Iraq include tobacco, textile products, and household appliances. Exports to Iraq could reach $240 million by the end of this year, or as much as 50 percent more than last year, and representing one-quarter of all our exports to the African and Middle East markets. [Excerpts] [Belgrade PRIVREDNI PREGLED in Serbo-Croatian 2 Oct 79 p 12]

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November 16, 1979

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